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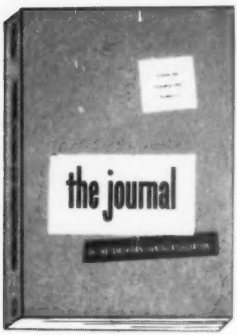

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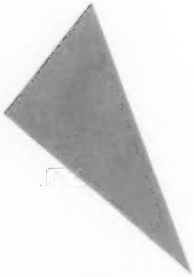

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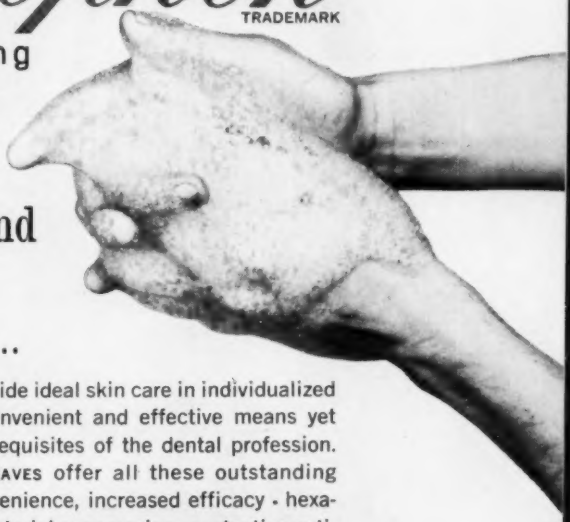

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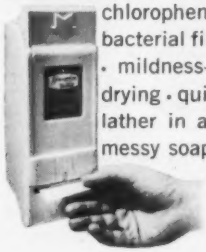

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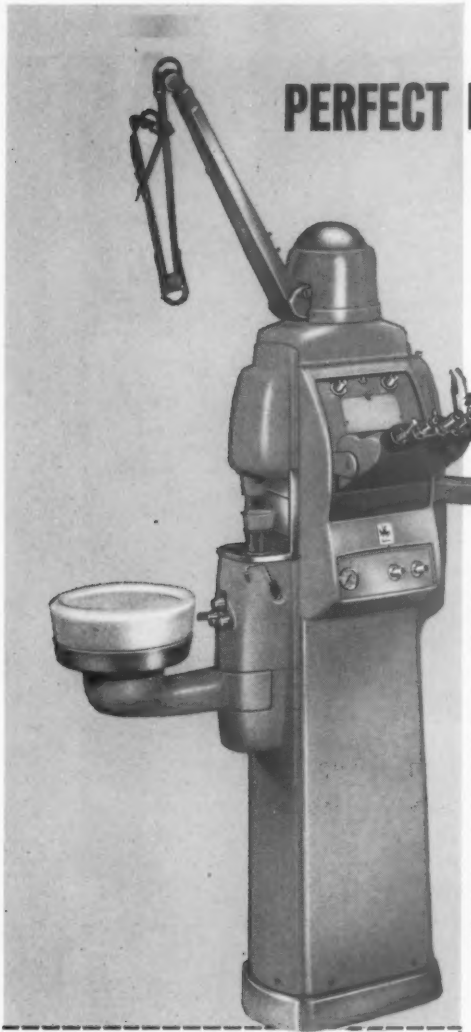

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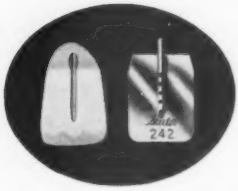

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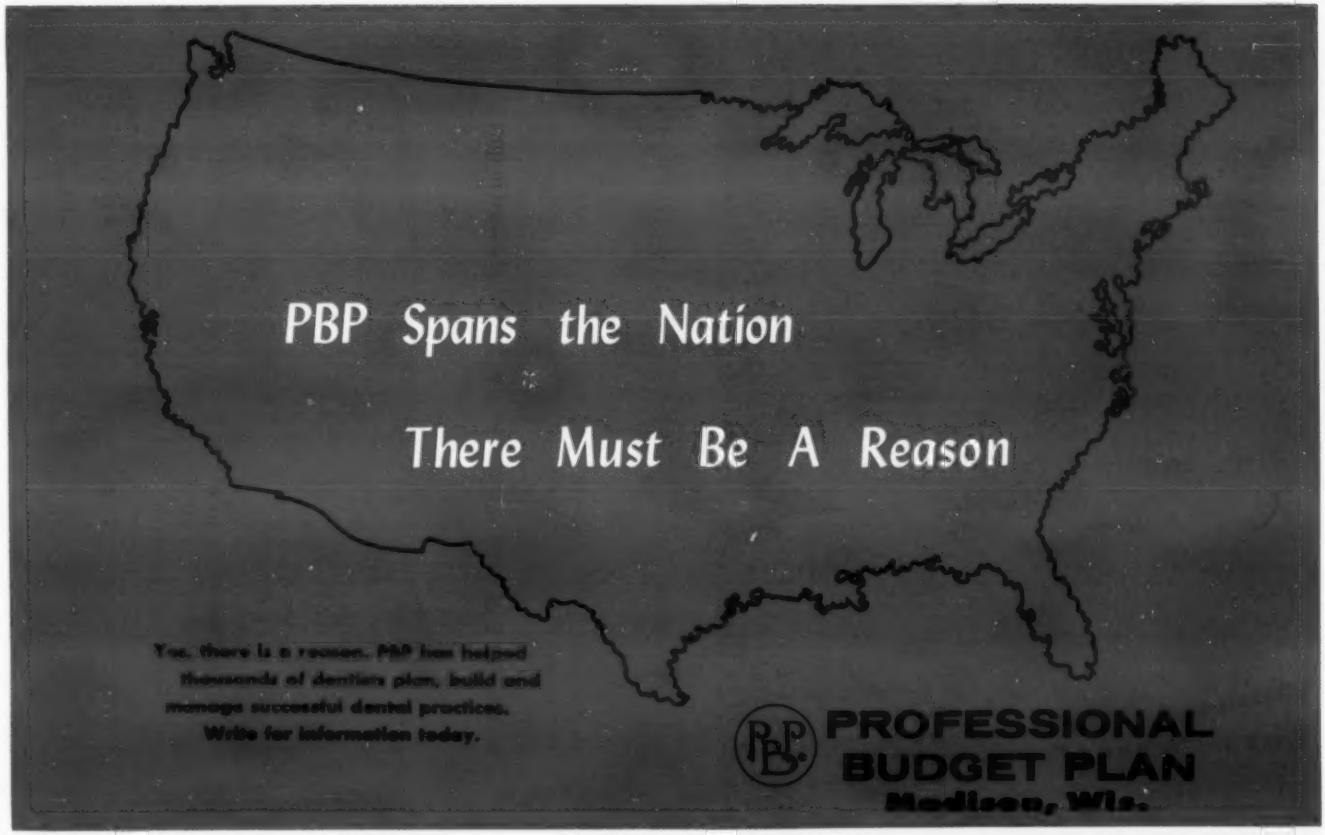
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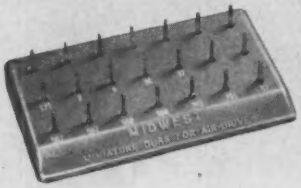

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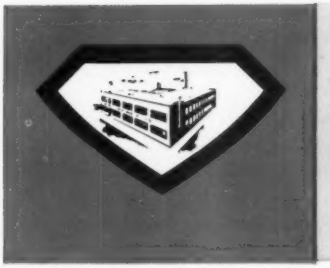

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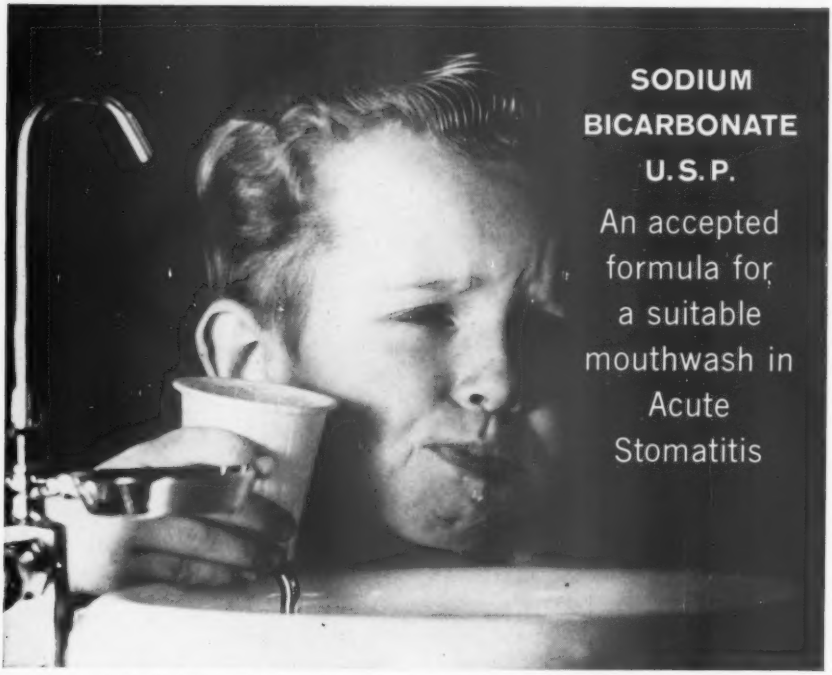

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Marginal penetrations of dental restorations as studied by crystal violet dye and I^{131}

Robert E. Going, D.D.S., M.S., Denver; Maury Massler,† D.D.S., M.S., Chicago, and Harold L. Dute,‡ D.D.S., Hines, Ill.*

Crystal violet dye and radioactive sodium iodide were employed to test the marginal integrity of all the filling materials in common clinical use. Both old and fresh restorations were studied. All restorations showed some degree of penetration by I^{131}. In gold foil, copper amalgam and red copper cement, the isotope penetrated to less than half the depth of the cervical and incisal margins; in gold inlays, to the floor of the cavity; in silver amalgam, zinc oxide-eugenol cement and temporary stopping, into the underlying dentin. In silicate cement restorations, both dye and isotope penetrated into the underlying dentin. In zinc phosphate cement and acrylic restorations, both dye and isotope penetrated into the pulp. Copper amalgam and red copper cement provided good marginal sealing. There was a complete lack of sealing in zinc phosphate cement and acrylic restorations. Old silver amalgam and silicate cement restorations appeared to show less penetration at their margins than did fresh restorations.

Hermetic sealing of the margins is the primary requisite of a successful dental restoration. Fluid exchange at the margins of restorations has received relatively little attention in dental research, yet this factor influences the life of the restoration and its liability to recurrent caries.[1,2] The purpose of this study was to test the marginal integrity of all the filling materials in common clinical use, employing crystal violet dye and radioactive sodium iodide (I^{131}) as tracer solutions. This was done on freshly extracted teeth which were restored immediately after extraction, as well as on extracted teeth already containing restorations of various ages.

The dye was combined with the isotope solution in order to compare the

influence of molecular size on the degree and path of penetration. Apart from the inherent ability of the isotope to penetrate more deeply than the dye, the radioautographic technic permits the detection of minute amounts of tracer which otherwise could not be visualized.

The findings in this study are divided into three parts: (1) observations on the permeability of freshly cut dentin, (2) marginal penetration around new fillings and (3) marginal penetration around fillings which have aged in the oral cavity.

REVIEW OF LITERATURE

The integrity of the margins of dental restorations has been studied previously using a variety of technics.

Bacteria • In 1929, Fraser[3] studied marginal permeability to see if bacteria were able to pass through the filling material or around its margins. She inserted fillings into the open tops of etched glass ampules. The base of each glass ampule was filled with plain broth culture media (pH 7.2). The ampules then were immersed in broth seeded with *Bacillus proteus, alpha hemolytic streptococci* or *Escherichia coli*, small motile organisms which could pass through or around the filling after a day or more of culturing. By this means she found amalgam and copper cements impermeable to bacteria. Zinc oxychloride cement and synthetic porcelain (silicate) remained sterile and impermeable to bacteria. Gutta-percha also remained sterile, but temporary stopping permitted bacteria to pass between the filling and the cavity walls.

Dyes • Fischer[1] placed 60 fillings in vivo and 90 fillings in freshly extracted teeth and then suspended all these in a variety of stains (eosin, methylene blue, hematoxylin and mercury bichloride, prontosil soluble red). Ground sections showed that each of the filling materials (zinc phosphate cement, copper cement, silicate cement, amalgam, acolite inlay metal, gold inlay, gold foil and acrylic resin) allowed a certain degree of marginal penetration of these stains. Acrylic fillings, especially those polymerized in the mouth, showed the greatest amount of marginal leakage.

However, Buchanan[4] submerged 40 freshly extracted teeth filled with acrylic resin in an aqueous solution of methylene blue for one week, along with 40 similar teeth filled with silicate cement. He found that all 40 silicate cement fillings showed penetration of dye into and around the filling margins, whereas the acrylic fillings showed no penetration of dye into the acrylic substance or along the filling margins.

More recently, Hirsch and Weinreb[5] tested the marginal fit of dental restorations in freshly extracted teeth, using a 2 per cent aqueous solution of an aniline dye. Silver amalgam was shown to have a good marginal seal since there was no dye penetration. Silicate and zinc phosphate cements showed considerable marginal leakage, as well as diffusion of dye into the filling materials. Zinc oxide-eugenol cement sealed the cavities well but the outer layer of the material absorbed the dye to varying degrees. In contrast to other reports, they found that gutta-percha and acrylic resin showed a marginal seal almost as effective as that obtained with amalgam. However, the exposure of the acrylic restorations to temperature changes in the range of 4°C. to 60°C. showed that this good initial cavity seal was destroyed by temperature variations.

Nelsen, Wolcott and Paffenbarger[2] studied the opening and closing of the margins of restorations subjected to temperature changes, in the mouth and in extracted teeth. They demonstrated a fluid exchange along the margins of all the filling materials investigated (acrylic resin, amalgam, gold inlay, silicate cement, zinc phosphate cement, gold foil, gutta-percha and zinc oxide-eugenol ce-

ment). It was suggested that marginal percolation was caused by a difference in the coefficients of thermal expansion between the teeth and the restorations.

Air Pressure • Fiasconaro and Sherman[6] sealed a tube into the pulp chamber of extracted molars, immersed the teeth under water and determined the amount of air pressure necessary to break the marginal seal of gold foil, inlay, amalgam, silicate cement, zinc phosphate cement and a variety of self-curing acrylic resin restorations. The appearance of an air bubble at the cavosurface margin of the filling was considered evidence of leakage.

Acrylic resins were found to leak at 6 to 8 pounds of pressure, silicate cements at 38 pounds and inlays at 45 to 50 pounds, whereas amalgams, gold foils and zinc phosphate cements did not leak at the maximal limit of 50 pounds of pressure per square inch.

Isotopes • Radioactive isotopes have been used in a limited manner to test the marginal seal of fillings. Armstrong and Simon[7] reported in a small series (eight extracted teeth) that all six of the fillings they used (amalgam, gold inlay, gold foil, zinc phosphate cement, silicate cement and acrylic resin) showed varying amounts of marginal penetration by Ca^{45} after 48 hours' immersion in a solution of this isotope. In most cases there was no absorption of Ca^{45} into the filling material.

Subsequently, Sausen, Armstrong and Simon,[8] using 24 extracted teeth filled with acrylic resins only, reported that radiocalcium can, in time, penetrate the margins of any acrylic restoration, regardless of the brand of material or the technic used in placing the acrylic resin. However, consistently less penetration was seen at the margins of those restorations placed with the brush-on technic. It was also pointed out that despite the fact that dry acrylic resin would absorb water, no radioactivity was seen within the bulk of the restorations and in most cases the calcium ions did not adhere to the filling surfaces.

Crawford and Larson[9] tested the marginal seal of nine old amalgam and four old gold inlay restorations with $Ca^{45}Cl_2$ at a neutral pH. They showed that "service in the oral cavity has certainly not made these fillings less susceptible to fluid penetration." However, they had no controls or new restorations for comparison.

Wainwright,[10] in discussing the penetration of intact and injured tooth enamel by various radioactive salts (calcium, zinc and copper), made incidental reference to the marginal penetration of these isotopes around several old silicate cement restorations present in some of the teeth. The margins of these restorations were penetrated completely by radiocalcium. In some teeth with old amalgam fillings, immersed in radioactive zinc and silver compounds, some leakage at the margin of the amalgam was noted, but in others there was no penetration. Wainwright also demonstrated three levels of enamel permeability: the first, diffuse penetration through intact enamel by nicotinamide and urea; the second, penetration of enamel defects only, by calcium, zinc and silver; and the third, surface adsorption only by large molecules of plutonium. He also showed that intact dentin could be penetrated by all the radioactive isotopes that he used in his study.

This review shows that the permeability of the margins of restorations has been recognized as an important factor in good restorative dentistry and that several attempts have been made to study this phenomenon using a number of technics. However, it was clear that these studies have not reached the point of quantification and that they were not yet complete. It was therefore the purpose of this study to test all restorative materials, using the best investigative

technics with the hope of at least partial quantification.

MATERIALS AND METHODS

The present study is based on the investigation of cavities prepared in 316 freshly extracted human teeth. The teeth were placed in a normal saline solution with 1 per cent glycerin stored at 44°F. (7°C.) immediately after extraction, and were kept in this solution between one and six hours before treatment was begun.

The teeth were extracted from male patients aged 26 to 79 years (average age, 45 years). Full mouth extractions (prior to complete denture construction) were favored so that various dental filling materials could be studied in teeth from the same patient. Complete records were kept of each patient, including preoperative full mouth roentgenograms.

The filling materials studied were silver amalgam, cast gold inlay, gold foil, acrylic resin, silicate cement, red copper cement, copper amalgam, zinc oxide-eugenol cement, zinc phosphate cement and temporary stopping.

Old silver amalgam, cast gold and silicate cement restorations which had been in the mouth for at least one year prior to extraction, were studied in order to compare marginal penetration around newly placed and much older restorations.

Open preparations containing no fillings were studied as negative controls and for comparison.

A Class V box type cavity preparation was made on each tooth. Some preparations were made on the buccal or labial surface of the tooth, and other preparations were made on the lingual surface, depending upon which surface presented the greatest area of clinically sound enamel. Occasionally, preparations were made on both the lingual and the buccal surfaces and filled with different filling materials for more accurate comparison of marginal penetration.

Class V (cervical) box type cavity preparations were used consistently in order to reduce the many variables inherent in occlusal cavity preparations. Consistent results and reasonable marginal integrity were difficult to achieve with occlusal preparations because of the pits and fissures, and the enamel was very often damaged by plaques and incipient decalcifications. In many preliminary trials the penetration of the isotope into the dentin underlying the restoration was greatly dependent on the nature of the underlying dentin, that is, its sclerotic and translucent zones, as well as the amount of secondary dentin in the subjacent pulp. Sclerotic zones and secondary dentin formations were often present under the occlusal enamel but were much less frequent under the buccal or lingual enamel. For these reasons, Class V cavity preparations were used in preference to occlusal restorations. Teeth with no cervical lesions in the enamel were selected. The smooth enamel margins and general absence of sclerotic and secondary dentin under the preparation greatly reduced the variability in marginal penetration as seen in the radioautograph.

Radioactive sodium iodide (NaI^{131}) was selected as the tracer[11] of choice because of its availability, its short but adequate half-life (eight days), its inertness as a tracer and its ability to produce fairly detailed autograms. To prepare this tracer the concentrated radioactive solution was diluted in distilled water to the specific activity required (25 to 50 microcuries per milliliter). The teeth were immersed in 2 ml. of the solution (pH 6.0 to 5.2) and placed in separate tubes for 24 hours, to which 0.2 ml. of 0.025 per cent crystal violet dye (aqueous solution) was added. This permitted simultaneous analysis of marginal penetration of the isotope and the dye.

Procedure • All freshly extracted teeth were washed under cold running water to remove blood and saliva, then cleaned

and placed in separate plastic tubes each containing 2 ml. of normal saline solution with 1 per cent glycerin. The teeth were numbered, and the data related to each tooth (type of tooth, patient's age, sex, caries susceptibility and periodontal condition) were recorded.

Class V cavity preparations were cut on the labial or lingual surfaces, about 1 to 2 mm. above the cementoenamel junctions, to avoid placing the gingival margin on the porous cementum. The openings were made with a ¼ inch diamond wheel in a straight handpiece revolving at approximately 3,000 rpm. The preparations were squared with a no. 557 straight fissure tungsten carbide bur, also revolving at 3,000 rpm. Intermittent air blasts cleaned and cooled the teeth. Internal angles and retention were placed with a no. 35 inverted cone carbide bur. Chisels were used to finish the enamel margins. The size of the cavities was larger than usual to assure maximal bulk of the filling material and adequate undercuts to prevent dislodgment during sectioning of the teeth. The depth of the cavities equaled that of the inverted cone bur and penetrated approximately one half the thickness of the dentin. The teeth were re-immersed in the saline solution prior to placing the fillings.

While the filling materials were being prepared by an assistant, the cavities were dried with a stream of air. The filling materials were mixed and placed according to manufacturers' specifications. The restorations were allowed to dry in air for varying periods of time, according to the material used. Those made with silicate cement, gold foil, cast gold inlay and acrylic resin were polished with linen strips or sandpaper disks lubricated with cocoa butter. Although the amalgam and phosphate cement restorations were unpolished, they were carefully carved immediately after insertion.

The newly filled teeth were then returned to the tubes containing normal saline solution for 30 to 60 minutes. After that time, the teeth were removed from the saline solution, dried, and placed into individual tubes containing the dye and radioactive tracer. The crowns were immersed downwards to insure complete coverage during the 24-hour immersion period, at room temperature. When the teeth were removed from the radioactive solutions they were washed thoroughly with distilled water and wiped well with a gauze pad to remove any loosely adhering isotope which might interfere with the final autogram.

Sectioning of Teeth • All teeth were embedded horizontally in a quick setting impression plaster with the Class V restorations facing up and exposed. An acrylic former contained the plaster and the tooth until a final set had occurred. After 15 minutes, the plaster block was mounted for cutting in a modified Harig grinding machine. The tooth was cut with a three inch rubber bonded disk, 0.015 inch thick, impregnated with aluminum and ferric oxide using a thick jet of distilled water or diethylene glycol as the coolant. Large quantities of water were used to cool the specimens during cutting in order to remove all loosely adherent isotope particles, since the object in this study was to trace only the tightly bound isotope.

Two longitudinal cuts were made through the center of the filling, producing a planoparallel center slab slightly less than 1 mm. thick. The total time for cutting was approximately two and one half minutes. At no time was the tooth allowed to become overheated.

The center slab and the two side sections were removed from the plaster, and again washed thoroughly with distilled water. The cut surfaces were then polished manually on silicon carbide abrasive paper no. 220A. The sections were washed finally with distilled water, wiped with a clean gauze pad to remove again adherent radioactive particles which might interfere with the final radioauto-

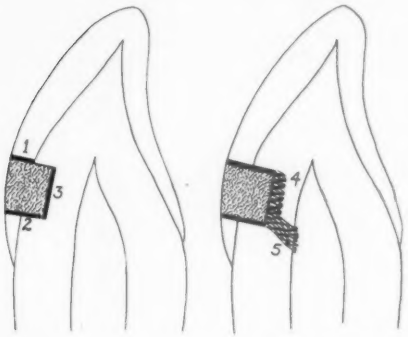

Fig. 1 • Method of assessing the various depths of penetration by tracer solutions

graph and permitted to air dry for 24 hours. Dried slabs were found to give better radioautographs.

Radioautographic Methods • The finished tooth slabs were taken to the darkroom and placed between two bare intraoral roentgen-ray films (Minimax extra-fast double coated) and inserted between two plastic blocks (1¾ inches by 3 inches) tightened by bolts at each end. This pressed the tooth section tightly against the films, thus increasing the sharpness and the detail of the final radioautograph. It was important for the tooth slab to be of consistent thickness so that the pressure exerted was equal on the flat surfaces of the specimen.

The specimens were placed in light-tight boxes and exposed for varying periods of time, from 1 to 24 hours. The exposure times were determined empirically. The films then were developed as in ordinary roentgenography according to the manufacturer's instruction.

Radioautographs of each specimen were prepared to provide at least one slightly underexposed, one slightly overexposed and a series of correctly exposed films. This was necessary for a critical evaluation of the depth of penetration of the isotope.

In addition, radioautographs were made after the specimen, pressed between two films, was briefly exposed to ordinary roentgen rays. This gave an accurate outline of the specimen, the pulp chamber and the dentinoenamel junction. It also permitted a more accurate location of the tracer within the filling and the dentin by decreasing the effects of halation by the isotope.

Dye Penetration • Both sides of the center slab as well as the inner and outer surfaces of the outer hand sections were examined and photographed on color film. These records permitted a comparative analysis of degrees of penetration by the dye through and around fillings. Color photographs were taken at 1:1 and were examined under 5X magnification. All photographs were checked by direct inspection of the teeth under a dissecting microscope at 15X magnification.

Evaluation of Penetration • An attempt was made to quantify the depth of penetration by using a standardized system of recording as illustrated in Figure 1. This is a modification of the systems suggested by Wainwright[10] and by Hirsch and Weinreb.[5]

0 = no marginal penetration

1 = superficial penetration of dye or isotope

2 = penetration of dye or isotope to the floor of the cavity

3 = penetration of dye or isotope all around the filling including the floor of the cavity

4 = diffusion of dye or isotope part way into the dentin

5 = diffusion of dye or isotope completely through the dentin and into the pulp.

This scheme was used to evaluate the depth of penetration of isotope and dye in each specimen. Both sides of the restoration were used in the evaluation.

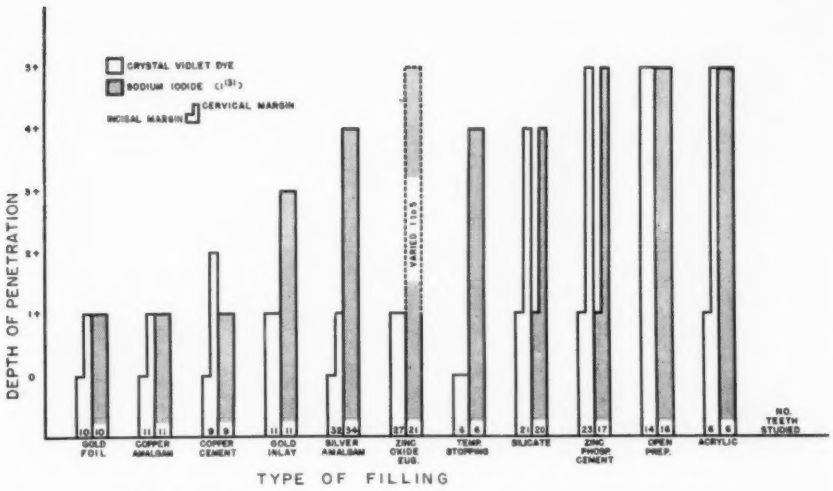

Fig. 2 • Depths of marginal penetration around different filling materials

The results were then tabulated and arranged in a graph (Fig. 2).

Supplementary Analyses • Although this study is primarily concerned with the penetrability of the margins of various restorative materials, it became evident after preliminary trials that additional factors needed study and clarification before the findings could be properly evaluated. It was necessary to determine the optimal time of immersion of the specimens in dye and isotope solution. It was also necessary to determine the rate and depth of penetration of I^{131} and dye through the freshly cut dentin of unfilled cavities, for comparison with the depth of penetration under the filled cavities. Furthermore, since the experimental restorations were placed in vitro (and tested immediately) the findings could not be translated to clinical interpretation unless at least a few supplementary tests were also made in vivo. A small number of cavities were therefore prepared in vivo and compared with the in vitro results.

Since the margins of freshly placed restorations were found to be quickly penetrated by radioiodide, it also became necessary to question whether older restorations (especially those placed in vivo) were similarly penetrable. For this reason, a series of old restorations were tested for comparison.

During the preliminary phases of this study, a number of observations suggested that additional factors influenced the marginal penetration. The permeability of the filling material itself played a significant role in the marginal penetration of both the dye and the isotope. The permeability of the enamel adjacent to the restoration strongly influenced the rate and depth of marginal penetration by both dye and isotope. This finding made necessary a separate analysis of the cervical and incisal margins.

FINDINGS

The permeability of freshly cut dentin under Class V cavity preparations was studied in 47 teeth. The unfilled cavity

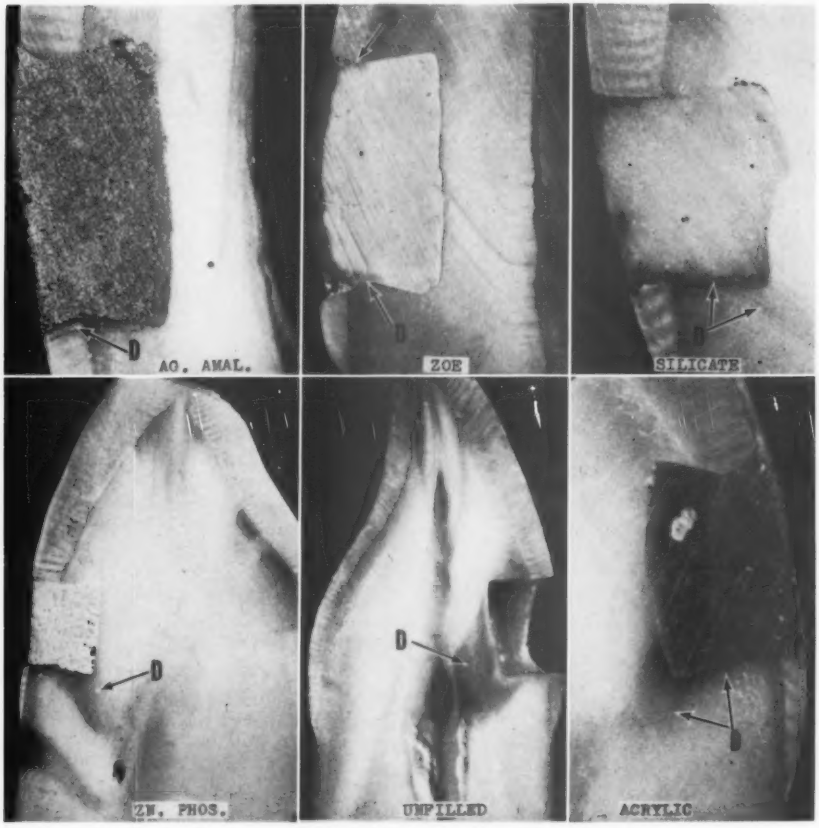

Fig. 3 • Cut surfaces of teeth showing marginal penetration of crystal violet dye (D) around or through different filling materials. Ag. Amal., silver amalgams; ZOE, zinc oxide-eugenol cement; Silicate cement; Zn. Phos., zinc phosphate cement; Unfilled cavity; Acrylic resin

was immersed in dye and I^{131} solution for 24 hours. The depth of penetration through the open preparation and into the dentin to the pulp chamber was recorded to serve as a basis for comparison with the filled cavities.

All open cavity preparations that were immersed in crystal violet dye for 24 hours showed an intense purple band penetrating along the dentinal tubules to the pulp chamber (Fig. 3).

The influence of immersion time on the depth and the intensity of dye penetration was studied in 19 freshly extracted teeth with open cavities. Three were placed in the crystal violet dye for one hour, 14 were immersed for 24 hours and 2 were placed in the dye for one week.

The teeth immersed in dye for one hour showed only a faint staining of the dentin, in some cases almost to the pulpal outline and in others into the pulp chamber. Under high magnifica-

tion, some dye could be seen reaching the pulpal surface in every specimen. In all the teeth immersed for 24 hours, the dye could easily be traced to the pulpal surface. In the teeth immersed for one week, the dye also reached the pulpal surface. The only difference between the teeth immersed for 24 hours and those immersed for one week was a somewhat deeper intensity of the stain in the latter.

These findings indicated that 24 hour immersion at room temperature was sufficient to achieve maximal diffusion and penetration of the dye through the dentin.

It became necessary at this point to test whether a difference existed in dentin permeability when cavities were cut in vivo or in vitro. Two fully erupted third molars were therefore selected in a volunteer. Class V cavities were prepared in vivo and crystal violet dye solution was inserted into the cavity. One tooth was extracted after one hour, the other after 24 hours' exposure to the dye. These teeth were sectioned at once. The tooth exposed to the dye for one hour showed a faint, narrow, purple band following the tubular pattern to the pulp chamber. The tooth exposed for 24 hours showed an intense purple band very similar to that seen in the larger series of teeth tested in vitro.

These observations suggested that dentin permeability in freshly extracted teeth and in in vivo teeth is similar. They also suggested that the intensity of staining rather than its depth of penetration may be influenced by the length of time that the teeth are immersed in the dye.

Cavities were prepared in 16 freshly extracted teeth and the open cavities were immersed for 24 hours in NaI^{131} solution. The isotope penetrated through the dentin to the pulp chamber in all of the specimens studied (Fig. 4).

In order to compare the depth and the intensity of dentin penetration by the radioactive isotope as influenced by immersion time, three freshly extracted teeth with open preparations were placed in NaI^{131} for one hour and two for one week. Radioautographs of teeth immersed for one hour showed faint penetration of the isotope to the pulpal wall. Teeth immersed for one week showed a dense penetration to the pulp chamber similar to that seen in the teeth immersed for only 24 hours. These results suggested that, as with the dye solution, 24 hours' immersion in isotope solution at room temperature was adequate to permit complete penetration of the isotope through an open cavity preparation.

To test this conclusion further in respect to penetration of the isotope along the margins of restorations, three freshly extracted teeth were prepared with Class V silver amalgam restorations and immersed in NaI^{131} solution for one hour, 29 specimens were immersed for 24 hours and 2 were immersed for one week. The teeth immersed for one hour showed penetration of the isotope to the floor of the dentin (3+). Those immersed for 24 hours showed penetration, in most instances, into the dentin almost to the pulpal outline (4+). Those immersed for one week showed penetration to the pulp chamber (5+). The difference in penetration between teeth immersed for 24 hours and for one week actually was very slight. This indicated that immersion of teeth with fillings for one hour at room temperature does not allow I^{131} enough time for optimal diffusion and penetration, and suggested that the minimal immersion time for teeth with fillings should be 24 hours.

Permeability of Margins of Different Dental Restorations • After the depth of penetration by dye and I^{131} in unfilled cavities was established, it was possible to interpret the penetration of these tracers when various filling materials were placed within such cavities.

In group I (gold foil, copper amalgam and red copper cement), penetration by both dye and I^{131} was very superficial,

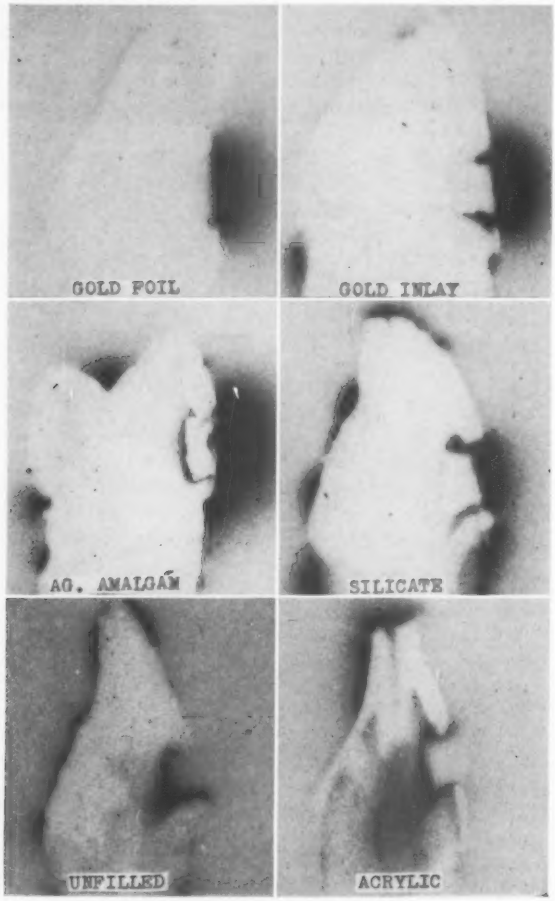

Fig. 4 • Radioautographs showing marginal penetration of I^{131} around different filling materials. Gold foil 1+; Gold inlay 3+; Silver amalgam 4+; Silicate cement 4+; Unfilled cavity 5+; Acrylic resin 5+. Note marked adsorption of I^{131} on the surface of all fillings except acrylic resins. Note also penetration of I^{131} into substance of silver amalgam and silicate cement

progressing to less than one half the length of the cervical and incisal margins in 24 hours (1+).

In group II (gold inlay), dye penetration was still superficial (1+), but I^{131} penetrated both the cervical and incisal margins to the floor of the cavity (3+).

In group III (silver amalgam, zinc oxide-eugenol cement, and temporary stopping), dye penetration was still superficial (1+), but I^{131} penetrated through both margins to the floor of the cavity and into the underlying dentin (4+).

In group IV (silicate cement), dye and isotope both penetrated through both filling margins to the floor and into the underlying dentin (4+).

In group V (zinc phosphate cement, open preparation (no filling) and acrylic resin), dye and isotope penetrated through both filling margins to the floor and into the underlying dentin to the pulp chamber (5+).

For details of findings in each type of restoration, see Figures 2, 3 and 4.

The cervical and the incisal enamel adjacent to the silver amalgam restorations were studied in the 55 teeth of this group. The area of cervical and incisal enamel observed was in the plane of the section only. The results of this study are summarized as follows:

The cervical enamel showed dye penetration in 50 per cent of the specimens, but the incisal enamel rarely showed dye penetration.

I^{131} penetrated the cervical enamel (100 per cent) more frequently than the incisal enamel (65 per cent).

The teeth were re-examined in three dimensions by placing the two side slabs and the center slab together as in the intact tooth and re-examining the surface of the enamel under the dissecting microscope. It then became clear that penetration of the enamel by dye and isotope occurred when the surface was etched or covered by a dye stained plaque. This occurred more often at the cervical enamel than the incisal enamel. The correlation between marginal penetration and surface plaque formation and etching was good.

In addition, the cervical enamel was much thinner than the incisal and accounted in part for the deeper penetration of both dye and isotope into the underlying dentin at the cervical margin.

Permeability of Margins in Restorations Aged In Vivo • In view of the findings in the previous section that almost all freshly placed restorations showed marginal penetration to radioiodide (though to varying degrees), it was decided to test whether older restorations, placed in vivo, showed comparable permeability.

Three types of restorations were studied in 43 teeth. Thirty of these were silver amalgam, three were gold inlay and ten were silicate cement.

Silver Amalgam Restorations Aged In Vivo • Three groups of teeth, six in each group, were restored in the mouth with silver amalgam. The teeth were extracted after 1½ hours, 24 hours and 2 weeks and were then immediately immersed in the dye for 24 hours. All these teeth showed superficial penetration (1+) of dye at the margins of the restorations, similar to that observed in the previous series filled in vitro.

Twenty-eight teeth with silver amalgam restorations placed one year or more prior to examination were extracted and immersed at once in dye for 24 hours. Marginal penetration by dye was again only superficial (1+).

The four groups of teeth mentioned previously (amalgam restorations placed in vivo and teeth extracted after 1½ hours, 24 hours, two weeks and more than one year later) were immersed in radioiodide for 24 hours. The isotope was much more sensitive than the dye in showing different degrees of marginal penetration. The 12 specimens extracted 1½ hours and two weeks after restoration with amalgam in vivo, showed deep penetration of I^{131} through the margins into the dentin to the pulp chamber (5+) very similar to the penetration of the isotope in the series of extracted teeth which were filled in vitro and placed in isotope immediately. This suggested that the results obtained in vitro were duplicated in vivo.

However, the six teeth extracted 24 hours after restoration in vivo, showed much less marginal penetration (only 1+). The 28 teeth extracted after more than one year in vivo showed a highly

variable degree of I^{131} penetration from none (0) to extreme (5+), with almost equal numbers in each category. Although the full explanation for decreased penetration in all teeth at 24 hours and in only some teeth after one year is not clear, this may be related to the contraction and expansion of the amalgam.[12]

The teeth which contained very old amalgams (more than one year) always showed a blackening of the underlying dentin as described by Massler and Barber.[13] Those teeth showed little or no penetration of the radioisotope into the dentin. In contrast, old amalgam fillings with residual or recurrent marginal caries showed a deep marginal penetration of the isotope to the pulp.

Gold Inlay Restorations Aged In Vivo • Only two teeth with gold inlays placed in vivo many years before extraction were available. These were immersed in dye and Na I^{131} solution for 24 hours. Marginal penetration by both the dye and the I^{131} was superficial (1+) as before. This observation confirmed the observations made from teeth prepared in vitro; that is, that marginal penetration around gold inlays is less than around silver amalgams.

Silicate Cement Restorations Aged In Vivo • Ten teeth with silicate cement restorations placed in vivo more than one year prior to extraction were immersed in dye and Na I^{131} solution for 24 hours. Marginal penetration of the dye was only superficial in each instance (1+), considerably less than was observed in freshly placed silicate cement restorations (4+). Marginal penetration by I^{131} varied from superficial (1+) to very deep (5+). However, the majority of teeth showed only superficial isotope penetration (1+). This was considerably less than that observed in newly placed restorations, in vitro (4+).

Both the dye and the I^{131} penetrated into the substance of the old silicate cements (1+ to 2+) almost as deeply as in the newly placed silicates (0 to 2+).

The observations obtained from restorations placed in vivo were comparable to the findings obtained from restorations placed in extracted teeth. A comparison of old and new restorations indicates that marginal penetration is reduced with age in silicates and in amalgams, when caries did not recur.

Summary of Findings • These investigations emphasized the following:

1. All filling materials showed some degree of marginal penetration by crystal violet dye and I^{131}. Some filling materials such as acrylic resin and zinc phosphate cement revealed gross marginal defects which permitted penetration of large dye molecules along the interface between filling and cavity wall, into and through the underlying dentin. Other fillings such as gold foil and copper amalgam showed superficial penetration limited to less than one half the length of the cervical and incisal margins.

2. Marginal penetration was influenced by the integrity of the adjacent marginal enamel. In general, when the marginal enamel was injured (by previous etching or during cavity preparation), it became permeable to the dye. This occurred more often at the cervical than at the incisal margin. The cervical margin was therefore the greater point of weakness to penetration by virtue of (a) the thinness of the enamel and (b) the frequency of its damage.

3. Old silver amalgam and silicate cement restorations appeared to show less penetration at their margins when compared to freshly placed restorations. The reason for this is not clear.

DISCUSSION

This study showed that the metallic fillings permitted less marginal penetration, in general, than the nonmetallic fillings. However, it must be pointed out that

these in vitro tests did not subject the filling margins to temperature changes. This eliminated the factor of percolation. It could well be that studies in vivo, or studies in vitro using hot and cold temperature changes, might demonstrate more percolation and marginal leakage around the metallic than around the nonmetallic fillings.

Variations in temperature certainly influence the marginal seal, because of differences in the coefficient of expansion of the filling material and the tooth structure. Nelsen, Wolcott and Paffenbarger[2] showed marginal percolation with all the restorative materials they investigated. Whether the fluid exchange which occurs at the margin of the filling is superficial or penetrates deep into the dentin, has not yet been determined. These experiments suggest that fluid exchange may not be limited to the space between the filling and the tooth, but may extend into the dentin and even to the pulp chamber. This emphasizes the need to seal the dentinal tubules under all fillings in order to protect the pulp. It also could explain why the dentin under old fillings often undergoes changes in density and thickness, to protect the vital pulp center from continuous irritations.

Differences in Cervical and Incisal Enamel Margins • It was striking to note early in this study that the cervical and incisal margins of the same specimen frequently showed different degrees of penetration by dye or isotope. Fortunately, it was possible to restore the original contours of the tooth by fitting the cut slabs together. This permitted re-examination of the surface of the enamel and the enamel margins in three dimensions. Furthermore, the dye clearly outlined the areas of organic deposits and the etched areas on the enamel surface. This helped to relate the marginal penetration as seen in the section to the surface characteristics of the enamel.

Apparently a stainable plaque alters the integrity of the underlying enamel so that it becomes porous to both dye and isotope. Consequently, a filling margin that was placed in a region of enamel which was strongly stained or etched, permitted a much deeper penetration by dye and isotope solutions than a margin that was placed in clean, unstained enamel. These facts are not new, but they deserve re-emphasis. It has been known for some time that a plaque may cover a precarious lesion. G. V. Black repeatedly emphasized that a cavity margin should not terminate in damaged or undercut enamel walls.

It was also obvious that the thinness of the enamel could be an important factor in determining the deeper penetration of dye and isotope at the cervical margin. Superficial penetration at the thicker incisal margin did not allow the dye or isotope to reach the dentin, whereas the same degree of penetration at the cervical margin reached to the dentin. This also is not new. Every clinician knows that the weakest margin in any restoration lies at the proximal cervical floor where the enamel is thinnest and frequently etched.

Finally, it might be suspected that the occurrence of natural defects or lamellae, as well as defects resulting from cavity preparation or filling condensation against the thin wall of cervical enamel, could also be responsible for the increased penetration in this area. It would be instructive to study the penetration of dyes and isotopes into the margins of occlusal preparations, with these points in mind.

Variations in Dentin Permeability • Since the depth of penetration is related to the permeability of the underlying dentin, the latter becomes an important consideration in studies of this type. There has been little added to the basic description of dentinal permeability given by Fish[14] in 1933, when he showed that

normal dentin would allow the diffusion of dye into the dentinal tubules from the pulp to the dentinoenamel junction. However, if the dentin had been involved in injury of any kind (caries, attrition, abrasion), it became sealed off by sclerosis of the dentinal tubules and by reparative dentin formed in the pulp. These changes would not allow the penetration of dye into the dentin or into the pulp. Consequently the degree of isotope penetration into the dentin as a result of marginal leakage may be dependent on the changes which have taken place in the dentin and the pulp. This may explain some of the variations observed in the penetration of isotopes under those restorations rated as 4+ and 5+ (Fig. 2). Dentin not affected by any type of sclerotic change may allow the passage of isotope to the pulp, whereas the presence of sclerotic or reparative dentin under a carious lesion may prevent the penetration of the isotope to the same depth. For this reason only Class V box type cavities were used in this study since the dentin in the labial or lingual region of the tooth was more likely to be of normal structure with a minimum amount of sclerotic change or secondary dentin formation.

Permeability of the underlying dentin is probably an important factor in determining whether marginal leakage of itself may or may not result in pulpal damage. Clinicians have treated the freshly cut dentin with various agents in an attempt to decrease its permeability and therefore its liability to penetration by noxious agents.[15]

Filling Materials • Insofar as the filling material itself is concerned, it would appear that the dimensional changes which occur as a result of the setting of amalgam and silicate cement and the polymerization of acrylic restorations are important factors which influence the marginal fit of the restoration. Gold inlays and foils are not subject to setting changes which may account, in part, for their better marginal fit.

However, dimensional changes in the restorative materials are not the only factors involved in the phenomenon of marginal penetration. Apparently the chemical composition of the filling material also plays a role. Phillips and Swartz[16] were able to demonstrate that the fluoride of silicate cement fillings is able to penetrate into the adjacent enamel and dentin and render it less soluble in acids. They suggest that this may account for the low incidence of recurrent caries around silicate cement fillings. This may also account for the lessened marginal permeability in old silicate cement fillings.

It was interesting and perhaps significant to note that the two filling materials containing copper showed superior marginal sealing when compared with their noncopper counterparts. Copper amalgam showed strikingly less marginal penetration than silver amalgam. Copper cement also showed less marginal as well as less penetration into its substance than did zinc phosphate cement. Copper may form complexes that bind the I^{131}. Copper cement seemed to behave more like a metallic filling than a cement filling in respect to marginal penetration. Both copper amalgam and red copper cement showed minimal marginal penetration, similar to gold foil.

The present findings showed that acrylic restorations (and zinc phosphate cements) leaked very badly when placed in solutions of crystal violet dye and isotope. In fact, our specimens suggested that the permeability of the underlying dentin might be increased somewhat under acrylic fillings. Hirsch and Weinreb,[5] however, demonstrated less marginal permeability of acrylic resins to aniline dye. The reason for this difference in results is not clear.

Crawford and Larson,[9] in their study of 12 old amalgam fillings, used $Ca^{45}Cl_2$ to investigate changes in marginal permeability after exposure in the oral cavity.

They concluded that there was no change in the marginal seal of the restorations. However, the 61 old fillings examined in this study showed that marginal penetration was consistently less in the aged amalgam and silicate cement restorations when compared to newly placed fillings (in vivo or in vitro).

Surface Adsorption and Filling Penetration • Pronounced differences were noted in the adsorption of both the dye and the isotope on the surface of the different filling materials and the penetration of these tracers into the substance of the material. Penetration of dyes into silicate, zinc phosphate cement and zinc oxide and eugenol cement have been noted before. Sausen, Armstrong and Simon[8] noted the failure of radiocalcium to penetrate the acrylic filling in spite of its ability to absorb water. Radioiodide also failed to penetrate this material.

The negatively charged I^{131} accumulated strongly on the surface of all the metallic restorations (gold foil, gold inlay, silver amalgam, copper amalgam) and also the surface of the copper phosphate cement. The most striking observation in this series was the consistent appearance of small discrete areas of radioactivity within the substance of the silver amalgam as if the I^{131} had penetrated into this structure and accumulated in certain areas. These were not the result of "dragging artefacts" incidental to grinding.

The surface adsorption and penetration of various isotopes into the substance of different filling materials will be reported separately.

SUMMARY

This investigation was designed to compare the marginal penetration of most of the filling materials in common clinical use, employing crystal violet dye and radioactive sodium iodide as a tracer solution.

Class V cavities were prepared in 316 freshly extracted human teeth and the majority of these cavities were filled with either silver amalgam, cast gold inlay, gold foil, acrylic resin, silicate cement, red copper cement, copper amalgam, zinc oxide-eugenol cement, zinc phosphate cement or temporary stopping. Unfilled cavities were studied as controls and for comparison.

Old silver amalgams, cast gold and silicate cement restorations which had been placed in the mouth for at least one year prior to extraction, were also studied in order to compare marginal penetration around newly placed and much older restorations.

The experimental teeth were immersed in crystal violet dye (0.025 per cent) and radioactive sodium iodide solution (25 to 50 microcuries per milliliter) for a 24 hour period.

Ground sections were prepared and multiple radioautographs were obtained under standardized conditions. The cut sections were also photographed on color film to permit a comparative analysis of dye and isotope penetration through and around the fillings.

The findings are divided into three parts: (1) observations on the permeability of freshly cut dentin, (2) marginal penetration around new fillings and (3) marginal penetration around fillings which have aged in the oral cavity.

CONCLUSIONS

Freshly cut dentin under unfilled cavity preparations was equally permeable to crystal violet dye and I^{131}.

All fillings showed some degree of marginal penetration by I^{131}. Under the conditions of this experiment gold foil, copper amalgam and red copper cement showed penetration of the isotope to less than half the depth of the cervical and incisal margins. Gold inlays showed penetration of the isotope to the floor of the cavity. Silver amalgam, zinc oxide-

eugenol cement and temporary stopping showed penetration into the underlying dentin. Penetration of the dye in all these materials was limited to the marginal walls. Silver amalgam showed a surprising amount of isotope penetration around the margins as well as into its substance.

Silicate cements showed penetration of both dye and isotope into the underlying dentin. Zinc phosphate cement and acrylic resins allowed penetration of dye and isotope into the pulp in a manner similar to that observed under unfilled cavities. It was interesting to note the good marginal sealing by copper amalgam and red copper cement, and the complete lack of sealing by zinc phosphate cement and acrylic resin.

One of the important factors determining marginal penetration by both dye and isotope was the integrity of the enamel adjacent to the filling. The cervical enamel margin located in thin areas of enamel and previously covered by a stainable plaque consistently showed deeper penetration by dye and isotope than the thicker and cleaner occlusal enamel margins.

Old silver amalgam and silicate cement restorations appeared to show less penetration at their margins when compared to freshly placed restorations. The reason for this is not clear.

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Dental Occlusion • Concepts of dental occlusion have been undergoing a radical change in the past few years. The former emphasis of the dental colleges on mechanical training and digital dexterity colored the thinking of an entire generation of practitioners. In treating the teeth as individual and independent entities, dentists overlooked the important fact that the teeth are but part of a whole masticatory organ, and that the masticatory organ in turn is a unit in the entire human organism. The older view of occlusion saw merely the physical mechanism of the teeth in their occluding positions. *N. A. Shore. Occlusal Equilibration, 1959.*

The oral tissues; the barometer of the body

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The science of nutrition is contributing substantially to the practice of medicine and dentistry. The dentist is in an excellent position to view the oral manifestations of the first appearance of systemic reactions to drugs and of systemic disorders. The dentist can emphasize to his patients the importance of proper dietary practices, but he should be well versed in nutrition. The relationship between oral and systemic health and disease is complicated by many factors, some of which remain unknown.

The burden of the practice of medicine and dentistry is lightened significantly today by the contributions made by the science of nutrition. Probably at no other time in the history of the healing arts is so much being accomplished for the individual patient, and the future is bursting with hope for still greater advances. Food has played a major role in these accomplishments. The fortification of certain foods has eliminated almost completely a variety of different diseases which only a few years ago were commonplace in the United States. The addition of vitamin D to milk, for example, has been responsible in large measure for the prevention of rickets, and the addition of iodine to table salt has eliminated almost completely endemic goiters due to iodine deficiency. Vitamin A, riboflavin, thiamine, nicotinamide and iron are added to bread and cereals in order to replace these elements which were lost as a result of the milling process, and fluorides are added to the water supplies of many communities with the result that millions of children have significantly fewer dental caries today than a decade ago.

Present clinical and experimental evidence suggests a need for unsaturated fatty acids in order to reduce blood cholesterol levels, and such evidence may provide a significant clue to the partial prevention of cardiovascular diseases. These and many other modern nutritional practices have contributed much to the elimination of some childhood diseases and have been noteworthy in steadily increasing the life span and years of productivity.

In the past decade the medical and dental professions have become much more impressed with the fact that the oral hard tissues represent more than inert structures occupying space in the mouth. This has been summarized nicely by Leicester[1] in the following statement:

> The development of the teeth involves a large number of processes and mechanisms closely integrated with one another and dependent upon a large number of external factors. A normal tooth can be formed only when the composition of the body fluids from which it is formed is normal and all physiological mechanisms concerned are functioning properly. Hence, almost any disturbance in

body function will be reflected in some phase of tooth development. Any alteration in metabolism, whether due to external factors, such as nutritional deficiencies, or internal factors, such as hormonal disturbances or interference with body function by infection or malfunction of an internal organ, may affect the growing tooth.

Furthermore, evidence suggests that both the oral hard and soft tissues may be considered a barometer of the organism as a whole. This fact has been emphasized in a study which demonstrates that dental caries itself can be used as an indication of a person's health in general. Manhold and Izard[2] examined the eight-month cumulative medical histories of 1,019 Naval aviation cadets, in which the complaint, diagnosis, treatment and disposition of the case were tabulated for each man. Similarly, the complete dental records of this group were collected. It was found that 15 per cent made five or more visits to the dispensary, and if one assumes frequency of medical complaints as a health index, this group (178 subjects) could be assumed to represent the "poorest" on a general health evaluation. When the subjects in this "poor health" group were compared with the group as a whole, it was found that there was a significant difference in the degree of dental caries. The mean DMF of the whole study population was 27.2, whereas in the group comprising the "poor health" members the DMF was 31.1. The difference is significant and presents good evidence suggestive of a relationship between general health and oral pathology. Furthermore, these data suggest that oral pathology as well should be considered in any complete medical or physical examination that attempts to assess the general health of a person.

RELATIONSHIP BETWEEN NUTRITION AND INCIDENCE OF DENTAL CARIES

Boyd[3] for many years has stressed the intimate relation between the soundness of the teeth and the proper functioning of the remainder of the body. He has provided convincing clinical evidence concerning the relationship between the level of nutrition and the incidence of dental caries. In his studies, children who were receiving controlled diets because of the medical management of diabetes mellitus showed pronounced hardening of the dentin at the base of existing carious lesions. This hardening was of such a degree that the carious process became entirely "arrested" and failed to show further progression as long as the dietary regime was continued. Similar clinical studies of nondiabetic children have established that arrestment of dental caries is possible providing the child ingests regularly a diet required for optimal nutrition in healthy children. It was Boyd's observation that "The dentin, which typically is softened at the base of a cavity, became as hard as stone within a period of ten to twelve weeks."[3] Boyd has stated that, in general, the control of dental caries has been most effective in children whose diets were under strict dietary and medical supervision and who were hospitalized, but that it is also possible to control dental caries in children when the full cooperation of both parents and the child is obtained even though he is living at home.

Of considerable added interest to general nutrition is the evidence provided by Boyd and his co-workers which concerns the inadequacy of diets commonly used, not only as regards dental caries control but for general daily nutrition. Boyd asserts that if these latter diets are of such a nature that they lead to the development of tooth decay, it is only reasonable to suppose that they well may affect other tissues adversely and, in general, contribute to suboptimal states of health. The diets which have proved most effective for the reduction of the incidence of tooth decay in the Iowa studies have differed from those commonly used by other workers, in their greater content of milk, vegetables, fruits,

eggs and cod-liver oil. It was their object to provide diets composed largely of "protective foods," that is, those which are high in their content of essential minerals, vitamins or proteins which frequently are deficient in many commonly consumed foods in the daily dietary. The basic diet includes the daily consumption of the following foods: one quart of milk; one or more eggs; two liberal servings of vegetables and a similar amount of fruit, part of which is fresh and preferably raw; one serving of meat; one liberal serving of butter and a teaspoonful of cod-liver oil. It is of considerable interest that Boyd's diet permits the use of refined carbohydrates as long as they do not replace "in any degree" any of the prescribed foods. His conclusions to this philosophy are summarized in the following passage:[3]

> In individual children, it is possible to reduce tooth decay to a negligible level through control of diet. If we could change our national food habits, the same could be accomplished for the population at large. Before this is brought about, however, we must witness changes in food economics, standards of living, and recognition of the importance of proper eating. The most tangible approach to this millenium is through the medium of education. Until leaders in the professions concerned with health learn the efficacy of diet in the promotion of better health, little may be expected from those who need help the most.

DIAGNOSIS OF DEFICIENCY SYNDROMES

The dentist and the physician have been able to diagnose a number of diseases, both those which result directly from food deficiencies and those which are only indirectly related to food factors, through accurate observation of the structures within and about the oral cavity. In many instances, there are no specific laboratory tests for many of the deficiency syndromes. Thus, the diagnosis must depend in many instances on a carefully taken history, physical and oral examinations and a recognition of what signs and symptoms characterize the particular disease. For example, the gingival mucous membrane may disclose scurvy and the tongue may show a variety of B-complex deficiencies, such as the glossitis in pellagra, nontropical sprue, chronic intestinal obstruction or a multiple vitamin deficiency such as a deficiency of niacin, vitamin B_{12}, riboflavin (ariboflavinosis) or folic acid. In some atypical cases of pellagra, a mild glossitis may be the only physical manifestation of the disease. The tongue often discloses changes subsequently shown to be associated with diabetes mellitus. In pernicious anemia the tongue is atrophic and fiery red. Oral histoplasmosis, once an obscure fungus disease, is now being recognized with increasing frequency in the endemic areas of southern Illinois, Indiana, Iowa, Kansas, Kentucky, Missouri, Ohio and Tennessee.[4]

The statement that "Physicians interested in metabolic and nutritional disturbances now examine the mouth before they take a blood pressure reading,"[5] may indicate a significant trend, and is one in which dentists should participate in more than a casual fashion. It is encouraging to note the close cooperation between pediatricians and dentists. At a recent national meeting of the American Academy of Pediatrics, an entire afternoon session was devoted to the study of children's dental problems.[6] Pratt,[7] in commenting on the importance of nutrition to the practice of pediatrics has stated:

> Nutrition plays an important role in pediatrics. Here physicians have a real opportunity to influence the eating habits and, therefore, the health of the nation. The cardinal principle of pediatric nutritional education is to make the eating of a wide variety of natural foodstuffs a pleasurable experience for the child and also for his mother.

The importance of proper utilization (metabolism) of each dietary factor and its influence on oral health has been reported by Drain and Boyd[8] and indi-

cates the necessity of providing a well-balanced diet for children at all times during the growth periods. They studied a group of 53 children for eight months and noted the arrest of the carious process in 42 children who received a regular institutional diet fortified with eggs, butter and milk. Of this group of 53 children, 5 showed no caries reduction, and as a result they were submitted to thorough metabolic studies. These intensive investigations revealed that these children were unable to utilize properly calcium, phosphorus and nitrogen. When nutritional correction of this condition was made by the feeding of the appropriate dietary factors, the carious process was stopped completely or became significantly less active. These studies clearly show that a child with rampant dental caries needs much more than dental attention to restore the decayed and missing teeth, and a careful medical and nutritional appraisal of his condition is indicated. In many instances, the correction of the condition leading to the rampant caries will significantly benefit the child both medically and dentally. Careful investigative metabolic and nutritional studies are needed in such cases in order to eliminate permanent medical and dental diseases, and no child should be dismissed from the dental office before his condition has been given careful attention, which in most instances will involve consultation with the family physician.

SYSTEMIC REACTIONS

Oftentimes, the dentist is in an excellent position to view the oral manifestations of the first appearances of systemic reactions occurring through the use of harmful drugs or medications. For example, the innocuous condition known as "hairy tongue" was first described more than a century ago, yet little scientific information exists as to its cause, method for prevention or cure. During the past few years it has been stated with increasing frequency that this entity can be caused by sulfonamides and antibiotics. A number of reports have been published citing lozenges, troches and inhalants which contain sulfonamides, penicillin, chlortetracycline (Aureomycin) and oxytetracycline (Terramycin). Dentists should continue their search of the oral cavity for primary signs which may first indicate a systemic reaction to an offending drug, and so advise the family physician.

Such diseases as these should be considered "man-made," and withdrawal of the offending medication will eliminate the lesion in most instances. Similarly, many of the symptoms of excessive exposure to radioactivity are seen first in the oral cavity. There is growing interest in this field, and dentists should make themselves aware of the oral changes which manifest themselves when the body receives too much irradiation. Along with the commonly recognized signs of overexposure, such as alopecia, brittleness of the nails and pigmentation, definite diagnostic signs appear in the oral cavity. Usually these are petechial mucosal lesions associated with the existing aplastic anemia, but also a glassy smooth tongue, gangrenous ulcers of the lips and buccal mucosa are extremely common. Exfoliation of the teeth due to osteomyelitis is observed frequently also.[9]

SYSTEMIC DISORDERS

The dentist frequently can be the first to diagnose many systemic disorders through observation of pronounced changes occurring in or about the oral cavity. Congenital malformations of the jaws and bones of the face, enlarged lymph nodes, cysts, tumors, blood dyscrasias such as acute leukemia and even such systemic disorders as measles (Koplik spots) or chicken pox (represented by painless transitory vesicles appearing just before the skin eruption) may be

observed first by the dentist before the patient is aware of the need for medical advice. Recently, the significant association of pigmented spots of the lips and oral mucosa with intestinal polyposis has called dramatic attention to the role that dentists may play in advising patients to seek medical advice for systemic disorders which are initially asymptomatic. Rohrs[10-12] has stated that in persons with repeated episodes of abdominal pain and with melanin (pigmented) spots on the lips and oral mucous membrane, the existence of intestinal polyps may be denoted "with strong suspicion." The recognition of congenital syphilis by Hutchinson's teeth, as well as the significance of oral tumors, erythema multiforme and leukoplakia are so well established that no additional comment other than that required for completeness is needed.

It is of interest to note that up to 37 per cent of persons who have congenital syphilis have been found to have hypoplasia of the occlusal surface of all four first molars.[13] Muhler and his co-workers have recently demonstrated a significant relationship between the thyroid gland and dental caries in the rat.[14] Infectious mononucleosis has one of its first observable clinical signs in the oral cavity. In 39 patients who had this disease, 21 had petechiae on the soft palate early in the course of the disease. The eruption consisted of multiple pin-point petechiae occurring on the soft palate usually near the junction with the hard palate and sometimes near the midline but occurring more posteriorly. The classical clinical cases were proven serologically also as infectious mononucleosis by positive heterophil antibody agglutination studies.[15] Such studies as these when taken collectively demonstrate the concept that the oral tissues or the salivary gland cannot be divorced from consideration when evaluating systemic diseases or the presence of good health. It has been stated by Spies[16] that in the past 25 years more than 70 per cent of the patients examined by him and his co-workers who had clinical evidence of deficiency diseases had some abnormality of the tongue, gingiva or buccal mucous membrane.

Good health, however, should not mean the absence of disease, but instead should carry with it the concept of a more positive physiological state. This has been emphasized repeatedly by J. F. Williams. Sherman and Lanford[17] also have stressed the importance of this nutritional concept and have shown that nutritional improvement of already normal health has been shown at every stage of the life cycle.

For years, it has been stated that canker sores (or aphthous stomatitis) may be related to systemic upsets, but little proof for this has been presented. It is now considered by many physicians that the local lesions of aphthous stomatitis in the mouth do represent in reality a focal manifestation of systemic disease. Similar lesions in the intestines actually have been demonstrated in cases of allergy, leukemia, agranulocytosis, uremia and tuberculosis when patients were examined at sigmoidoscopy. Intestinal symptoms of such a nature as to cause patient concern seldom are present, but frequently abdominal pain and diarrhea are present in those instances where ulcerated lesions can be demonstrated, and sigmoidoscopy reveals the same type of inflammatory reaction as observed in the oral cavity.[18] Truly, as Sir William Osler has stated, "The oral cavity is a mirror of the rest of the body."

NUTRITIONAL ADVICE FOR THE PRENATAL PATIENT

In recent years dentistry has made progress in the prevention of dental caries and the reduction of periodontal diseases. This has resulted in part from the application of nutritional principles to the prenatal patient as well as from the control of the diet of the young child. Most dentists realize that proper nutritional

advice during pregnancy is important, since digestion and absorption of food is often impaired in the early months. As a result, nutritional requirements frequently need to be increased. For example, the caloric requirement may increase only about 20 per cent, but the need for protein frequently may increase by 50 per cent and that for calcium by 100 per cent. It is seen, therefore, that the diet during pregnancy needs to be carefully considered in that it becomes a special problem in relation to protein requirements, vitamins and minerals. Simply to increase the protein requirement is not an adequate measure. The dentist occupies an excellent position among the healing professions to emphasize to his patients the importance of eating the proper foods and avoiding harmful dietary practices. However, it is important that the dentist be well versed in nutrition before he attempts to instruct his patients in this field.

> Unless the dentist keeps himself well informed on the latest aspects of nutrition, he would be wise to speak sparingly on the subject lest he unwillingly align himself with that endless group who blithely continue to err in the interest of nutrition.[19]

Furthermore, not only is an appreciation of oral changes resulting from nutritional inadequacies the responsibility of the dental profession, but an understanding of these phenomena will be of value to any complete understanding of the symptoms and subsequent correction of the metabolic disorder through dietary theory.

It would be unreasonable to assume that the oral tissues are not affected by systemic disease. Certainly the oral tissues, like any other body tissues, participate in metabolic equilibriums, and altered oral tissue metabolism is found in many generalized, nutritional and metabolic diseases.[20] These oral changes are reflections of other changes which are occurring elsewhere in the body. Frequently lesions of the mucous membranes which are indicative of systemic pathologic conditions such as herpes, varicella, or secondary syphilis (in which vulvar lesions also may be found) may come under observation first by the dentist.[6] However, in contrast, little accurate clinical information exists which specifically relates dental caries to systemic disorders. Cunningham[21] reports that there is no relationship between dental caries and the history of infectious diseases of childhood.

Such conditions as pregnancy have long been suspected as being a predisposing factor to dental caries, but present information indicates that if women have proper nutritional and dental advice previous to, during and subsequent to pregnancy, there is no greater tendency to dental caries during this period than normally occurs. Similarly, diabetes has been suspected as a causative factor responsible for dental caries. At one time it was a popular belief that diabetic children had a much higher dental caries experience than nondiabetics because the high blood glucose level resulted in high saliva glucose levels which subsequently increased the dental caries rate. It is known now that glucose does not pass the salivary beds even at high blood glucose levels. Also, if diabetic children receive proper nutritional, medical and dental treatment, the dental caries rate is no greater, and in some instances less, than that normally experienced.

COMPLEXITY OF THE PROBLEM

The relationship between oral and systemic health and disease is not a simple one. It is complicated by factors too numerous to mention, and many of the more important factors undoubtedly are unknown even at the present time. To emphasize the complexity of this problem, even the location where one resides within the United States, as well as the distance he lives from the seacoast may have a significant relationship to dental disease.[22] It is well known that geographic

location affects the promotion and resistance of certain diseases, and certainly it is not unexpected to find that these factors are also correlated with dental diseases. As mentioned by Kraybill and Fitch,[23] however, it is interesting to speculate as to how much effect the ingestion of locally grown foods and the chemical nature of the drinking water may have on this hypothesis. Of equal interest in regard to this problem is the relationship of the amount of sunshine present in a given area and the incidence of dental caries. Hadjimarkos[24] has shown that the dental caries experience among native born children in the Cascade Mountain area is related inversely to the amount of sunshine present. This finding, if it can be substantiated by other workers in many different areas, may prove to be an important nutritional clue in methods for controlling and preventing dental caries.

An evaluation of problems in human nutrition will bring to the clinician fundamental knowledge of the prevention and subsequent treatment of many diseases. In the future greater efforts should be made to discover tests for detecting subclinical nutritional deficiencies,[25] so that correction of the disease can take place before damage occurs. Progress is being made in this regard. For example, important information concerning a patient's vitamin C status may be obtained from a determination of the plasma ascorbic acid concentration, and since many workers today believe that diseases are chemical in origin, by chemical correction, cures will result. Much work is needed in this area, but the prospects for success are encouraging.

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Humility • Humility is teachableness. The truly humble man—scientist or layman—keeps open the spirit of inquiry, because he knows that he does not "know it all." *K. N. Hildebrand. Achieving Real Happiness, 1955.*

Dental health problems of the Negro population

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Dental diseases affecting Negroes are essentially the same as those affecting other racial groups. Generally, the Negro has a lower incidence of dental caries and a higher incidence of periodontal disease and malocclusion. The lack of dentists is a block to dental care for Negroes. Both the quantity and quality of Negro dentists should be stimulated. Restrictions and discriminations based solely on race should be eliminated. More dental health education directed especially at Negro children could reduce the apathy with which many Negroes regard dental problems. Negro dentists should be encouraged to pursue training in specialization, research and education, and ways should be found to provide careers for such trained dentists.

The common dental diseases which affect the Negro American are no different from those which affect the Caucasian American. The two dental diseases which most frequently affect the Negro population as well as the Caucasian are dental caries and periodontal disease. In an investigation of variations in dental caries rates among 2,928 white and 2,917 Negro children, Sebelius[1] found that the white children had more than eight times as many fillings. Higher rates of total dental caries were found in the white children. The Negro children, however, had lost more permanent teeth. There is the possibility that the differences in caries experience in these racial groups are the result of immunity and heredity. In addition, the poor economic circumstances and the absence of dental facilities are among the factors hindering the receipt of dental care by Negro children. These probable reasons for the observations in the Sebelius study should be noted.

Russell[2] has described some epidemiological characteristics of periodontal disease in a series of urban populations. Included in the groups studied were 28,926 white and 1,018 Negro persons. He concluded that Negroes showed a higher prevalence and a greater severity of the disease than whites did at all ages. In addition, both prevalence and severity of the disease in Negroes increased with age. At age 60 and over, about three fourths of the white population and nine tenths of the Negro population examined showed some apparent tissue damage.

DENTAL DISEASES IN AFRICAN AND EUROPEAN GROUPS

It is a frequent observation that, in the main, the teeth of Africans are excellent. Suk,[3] in his paper based on records made

partly among 1,008 subadult (birth to 20 years) Zulus of Natal and Zululand, and partly among the whites in Central Europe (of similar age range), stated that: (1) among the Zulus the individual teeth were well-developed, well-differentiated, seldom discolored and the cusps were well-formed; (2) at age 18, only 10 to 15 per cent of Central European whites in large cities had faultless sets of teeth, but 85 to 94 per cent of the Zulus had them, and (3) there was considerable difference in the number of decayed teeth between these groups: the white children had more than ten times as many decayed teeth as the Zulu children had.

This smaller incidence of caries in Africans attracted the attention of other investigators. Staz[4] compared results of his examinations of Bantus and Europeans and found the percentage of carious teeth per mouth higher in Europeans. However, he found that Bantus were more highly susceptible to periodontal disease. At the same time, he found that rural Bantus had a lower caries incidence than urban Bantus. Osborn and Noriskin[5] reported that the South African Bantu, relatively free from caries while living under primitive kraal conditions, acquired the European's susceptibility to dental decay as they adopted European ways of living. They also reported that the South African Bantu had a higher incidence of dental irregularities, but marginal gingivitis and periodontal diseases were rarely found among them.

Recent studies of the head and face of American Negro children have been conducted by Altemus.[6] He found that as many as 83 per cent of them had a high incidence of malocclusion. He indicated that between 50 and 80 per cent of them required some orthodontic treatment.

There is a similarity of observations in the limited number of studies which have explored differences in occurrence of dental diseases and abnormalities between American Negroes and whites. Generally in these findings the Negro has a lower incidence of dental caries but a higher incidence of periodontal disease and malocclusion. The relative dearth of information regarding differences, however, indicates an urgent need to repeat and expand basic studies.

DENTAL PERSONNEL

It is an accepted fact that there is an insufficient number of dentists and auxiliary personnel to care for the dental health problems of the American people.[7] The situation is more acute in the Negro portion of the American population. In 1940 the ratio of population to dentists in the United States was 1,865 to 1. At that time the ratio of Negro population to Negro dentists was 8,745 to 1, approximately 4.7 times that existing in the United States as a whole.

The latter figures indicate only an approximation of dental services available to the Negro, since there was no reliable method of determining what proportion of Negro patients were served by white dentists, or what number of white patients were served by Negro dentists. Even though it would not be accurate to say that mixed practices were widespread, it is an established fact that there were mixed practices in the North and the South among both the indigent and affluent populations. The ratios do serve, however, to indicate trends and to delineate basic problems which are still prevalent.

When the various regions within the United States were considered, the unfavorable position of the Negro population was even more noticeable. With almost 10,000,000 Negroes, the South had practically the same number of Negro dentists as the North, even though the North had less than 3,000,000 Negroes.[8] Although it contained more than 75 per cent of the nation's Negro population, the South had the most unfavorable ratio with 13,970 Negroes for each dentist.

The East South Central subdivision reached the lowest level with 16,357 Negroes for each dentist. In the North, there were fewer Negroes in the population, and the ratio was better. The most favorable proportions were found in the New England and Pacific regions, two areas with relatively small Negro populations. They had ratios of 2,072 to 1 and 3,630 to 1 respectively.

When the distributions were computed by states, the ratio of Negro dentists to population in the various states tended to show a uniform pattern, reflecting what had already been noted for regions and subdivisions. All the northern states had a better than national average Negro population-dentist ratio. These ratios ranged from 1,846 Negroes to 1 Negro dentist in Massachusetts to 6,114 to 1 in Michigan. Of the 16 southern states, only four had Negro dentist ratios better than the national average of 8,745 to 1. These states were: Delaware, West Virginia, Kentucky and Tennessee. The proportion in these 16 states varied from 4,529 to 1 in West Virginia to 37,054 to 1 in Mississippi, where almost one tenth of the Negro population of the United States resided. The six states with the most unfavorable ratios were Mississippi, 37,054 to 1; Alabama, 25,876 to 1; Louisiana, 23,592 to 1; Georgia, 21,699 to 1; South Carolina, 20,354 to 1; and Arkansas 17,873 to 1.

The distribution ratios of Negro dentists to population have not appreciably changed since the 1940 survey. Although the ratio of population to dentists in the United States as a whole dropped from the 1940 level of 1,865 per 1 to 1,692 per 1 in 1950, the ratio of Negro population to Negro dentists rose from 8,745 per 1 to 8,948 per 1 during the same period.[9] The southern region still presents a figure far above the national average in spite of the fact that the ratio of 13,504 Negroes per Negro dentist is less than the 1940 level of 13,970 per 1. There has been some shift in population; however, the South still has close to ten million Negroes.

In 1950, as previously, the states designated as "Deep South" led the nation in providing the least amount of dental services for Negroes, although the actual figures decreased: Mississippi, 29,015 per 1; Georgia, 23,617 per 1; Louisiana, 22,061 per 1; South Carolina, 18,268 per 1; Alabama, 18,141 per 1; North Carolina, 13,428 per 1; Arkansas, 13,332 per 1. The same four states, Delaware, Kentucky, Tennessee and West Virginia, had Negro-dentist ratios better than the national average of 8,948 per 1.

There was not sufficient gain in the ten years to alter the existing pattern and quantity of services available to Negroes.

It is believed that the distribution ratios of Negro population to Negro dentists are at present still similar, since deaths and retirements have more or less balanced new graduates and, therefore, there has not been much of a change in the number of Negro dentists in the nation. Even if this has increased by small increments, the increase of the Negro population has more or less offset it, so that the ratio of dentists to Negro population remains approximately the same.

BLOCKS TO DENTAL CARE

In the United States, dental care is one of the more expensive kinds of health services. The low income groups are the ones most affected by the high cost of health care. Often, families in greatest need are unable to pay for it. A large proportion of Negroes fall into this category; any survey, therefore, would reveal a high percentage of Negroes who are devoid of dental care simply because they have no money to pay for it. Low income is not the only factor hindering the receipt of dental care for Negroes. Among other factors are, of course, ignorance and folk beliefs. As is the case in the white population, many Negroes have not been ex-

posed to dental health information which would motivate them to seek the services of a dentist for other than emergency care. They would seldom, if ever, seek preventive and restorative care.

The general existence of folk beliefs and folk health practices which have hindered the seeking and acceptance of dental care has been acknowledged. Negro and white dentists have related a few instances in which Negro patients have refused to submit to dental treatment because "the sign was not right," or because the patient's "manhood would be affected." These and other folk beliefs associating the oral region with unrelated occurrences have had limited, if any, basis in fact. Nevertheless, they are blocks to dental care that are as effective as the other factors mentioned.

One other fact is worthy of consideration. Despite the greater transportation facilities and the extensive urban migrations which have been occurring in recent years, there is still a large proportion of Negroes who live in rural areas. The poor economy of these regions, and their remoteness, are sufficient drawbacks to render these rural areas unattractive and uninviting to dentists. A large number of dentists tend to locate where they will find the greatest opportunities for financial success and cultural advantages for themselves and their families.

Discriminatory practices also must be listed as one of the blocks to dental care. In a study of interracial dental practices in a southern city, Goldstein[10] indicated that white dentists do not, as a rule, have Negro patients. If treatment were rendered, it tended to follow the "emergency" pattern and was accomplished either before or after regular office hours, or during periods in which there were no scheduled appointments for white patients. Prolonged treatment of Negro patients by white dentists was improbable in this city. It is safe to assume that this pattern might be duplicated in greater or lesser intensity in all cities.

In addition, there has been adequate documentation[11] of prevalent nationwide discrimination which exists generally in hospital and health department clinics, and specifically in dental clinics. It has been equally well documented that there are inadequate and, in many instances, nonexistent dental services for Negro children in segregated schools. There also is a lack of opportunities for the appointment of Negro dentists to hospital staffs.

REMOVING THE HINDRANCES

Comparative professional costs and the rising prices for all commodities have determined the current charges for dental services administered by private practitioners. A method that suggests a reduction in charges for services, thus removing one of the hindrances to dental care among Negroes, cannot be regarded as practical. Undoubtedly, a great deal of assistance will be provided the Negroes by public-supported programs, group insurance plans, and other forms of subsidy which have been and are being tested and tried in different regions of the United States. So many of the public programs have been aimed at assisting the indigent population that large numbers of Negroes will most likely benefit from such plans.

Another difficult hurdle to overcome in providing good dental care for Negroes is the inequitable distribution of Negro dentists among the population. The concentration of dentists in large cities is a well-known phenomenon to which Negro dentists are not immune. The national pattern of distribution in various states also reflects the fact that professional personnel, physicians and dentists of whatever racial composition, tend to settle in the wealthier states where economic and cultural advantages are greater, and where diagnostic and treatment facilities are more plentiful and accessible.

The unbalanced Negro population-

dentist ratios in the South, which reflect a larger problem, are not likely to be brought to balance solely by economic inducements. Even if these financial inducements were made available to Negro dentists to motivate them to locate in remote and unattractive areas, such inducements would most likely be only temporary and fleeting ameliorations. It is a great deal to ask anyone to locate in areas where racial restrictions and discriminations are sanctioned either by law or custom. Consequently, there is an urgent need to discover ways to motivate dentists to serve in communities that are unattractive and economically disadvantageous.

Several possibilities seem obvious for improving dental health care among Negroes. First, a healthy mental and emotional climate should be created through the disavowing and elimination of all legalized restrictions and discriminations based solely on race. Second, a larger number of dentists should be trained. Third, a system of financial subsidy to dental trainees with the stipulation that some years of service be given in disadvantageous communities should be given careful study. The probability of having a larger percentage of these persons remain in such areas would be increased if environmental circumstances were favorable.

A hurdle of equal, if not greater, difficulty is the Negro's limited access to dental care because of racial discrimination. Every effort should be made to expand the opportunities for Negroes to secure dental services. These services should be rendered by all qualified dentists to every patient, regardless of race, who meets the legitimate criteria established by ethical dentists.

The elimination of ignorance will be accomplished when intensive health education and information programs are developed. The need for such programs among the Negro population is at a premium.

INCREASING QUANTITY AND QUALITY OF NEGRO DENTISTS

An increase in the number of Negro dentists is dependent on an increase in the number of Negroes graduating from dental schools devoted mainly to the training of Negro dentists. These schools graduate less than 150 students annually. Add to this the number of Negro students graduated from all of the nation's other 45 dental schools, many of which do not accept Negro applicants, and the annual total is still less than 200 Negro dentists graduated every year.

The construction of a larger number of dental schools for racial or religious minority groups exclusively has been suggested periodically as a means of increasing the number of dentists in these special categories. Such a plan does not merit even the slightest encouragement.[12] The difficulties in locating and employing a sufficient number of well-qualified teachers would be the initial, formidable obstacle. Futhermore, the implementation of democratic principles would demand that nonrestrictive eligibility for acceptance by all dental schools in the United States be a realistic practice rather than merely an ideal.

There are many persons both willing and able to proceed satisfactorily in professional schools who lack the required financial resources to get such an education. Recognizing that the average American family is unable to carry the total burden of four or more years of dental training without some financial assistance, the Dental Health Assembly in 1948 recommended federal aid to dental schools in the form of fellowships and scholarships which were to be granted on a national basis to all deserving students desiring higher education.[13]

The quality of dental personnel is as important as the quantity. It appears that the profession needs Negro recruits with more thorough educational backgrounds consisting of better preprofes-

sional preparation at the elementary, secondary, and college levels.

At the professional level, postgraduate education and attendance at clinics and dental meetings are regarded as primary sources of continued education, essential for maintaining and improving the quality of dentists and dental services. Negro dentists have not been welcome at such clinics and meetings in the past, and in some sections of the country, they are still actively discouraged from attending. The recent and constant advances in dentistry demand that all dentists keep abreast of these advances if quality of services is to be upheld.

DENTAL HEALTH EDUCATION

Health education serves the vital purposes of making people cognizant of health problems and of informing them where to go when it has been decided how and what to do about their problems. Neither of these purposes has been served to any appreciable extent in certain elements of the Negro population.

"Apathetic" has been the term used to describe the attitude of many Negroes to dental health problems. This attitude is the result of long periods of conditioning and has been attributed to the low position of dental health on the list of essentials of living. There are still too many Negroes who seldom have their teeth examined unless they hurt. When the pain becomes too intense, the patient demands that the offending tooth be removed. Surveys of Negro clinics have shown that dental care has generally followed the familiar pattern of many tooth extractions, few restorations and very little prevention.

An appreciation of dental services must necessarily be based on the second function of dental health education, the patient's understanding of the why, when, and how of these services. In the past, the imparting of such knowledge to Negro patients has not been a major concern of dental practitioners. Instructions regarding the need for restorations in carious teeth and replacement of lost teeth either were not given or were seldom followed.

If true appreciation of dental services is to be developed, every advantage must be taken of the opportunity to educate Negroes and to sell them on the desirability of an attractive mouth and all that lies therein. As is true in the case of all dental services, to be effective, dental health education should begin with the children.

Formerly there was little incentive for Negro dentists to pursue graduate education, specialization and research. Limited opportunities to put such training to use, and the economic handicaps which face the new dental graduates, were two of the most important factors leading Negroes into the practice of general dentistry. Recently, there has been an increasing number of young Negro men and women undergoing graduate training, pursuing careers in the dental specialties, and becoming interested in dental research.[12]

As a career, graduate education is closely associated with teaching, research, and administration. After Negroes have become qualified in these areas, there is still the problem of finding institutional employment for them. A survey[12] made by the author in 1945 indicated that only three of the so-called "white" dental schools had Negro members on their dental faculties. Eleven schools indicated that they would be willing to hire a qualified Negro dentist, but 16 schools indicated that under no circumstances would a Negro teacher be employed. These figures have not altered appreciably over the past 15 years.

SUMMARY

Dental diseases affecting Negroes are essentially the same as those affecting other racial groups. There is limited evidence

to indicate that significant differences occur in rates of caries, periodontal diseases and dental irregularities. Generally in these observations the Negro has a lower incidence of dental caries, but a higher incidence of periodontal disease and malocclusion.

There are not enough dentists to care for the dental health of the American people. Analyses of data indicate that this situation is more acute in the Negro segment, particularly in the South. The lack of dentists is a block to dental care for Negroes that can and should be removed. An increase in both the quantity and quality of Negro dentists should be stimulated.

As the number of dentists increases the individual attention, including health education, will also increase. Health education should begin with the children. It is probably the most important means of reducing the apathy which many Negroes feel regarding dental problems.

Negro dentists should be encouraged to pursue training in specialization, research and education so the services available to the Negro population can be expanded. Ways should be found to provide outlets and careers for the dentists after specialized training has been procured. There will have to be basic modifications in the concepts which support the denial of opportunities for service, education and participation solely on the basis of racial origin.

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Health Care Costs • Abandonment of our system of private medicine and dentistry as well as voluntary insurance for any government scheme could well be the straw that breaks the back of the American economy. Social security benefits already promised, even if not further expanded in accordance with congressional election year custom, will require by 1969 the collection of $216 per year from every worker earning $4,800 per annum and a like sum from his employer. Today, for many, social security taxes exceed their income taxes. It is naive to assume that there is no limit to what government can exact from the citizen. Government creates no wealth. It can only take from one person and give to another while losing considerable of the nation's economic life-blood in the transfusion. Yet fully one-quarter of the 7,300 bills now pending in Congress would confer special benefits on certain segments of the population without adequate provision for payment of these benefits. Enormous government spending even without the intensifying factor of recurrent deficits is the carcinogenic agent that triggers the cancer of inflation by increasing the cost of doing business at all levels while dampening economic incentives. *E. J. Faulkner, Common Sense and Health Care Costs, The Nebraska State Medical Journal, August 1959.*

A statistical study of malpractice and liability insurance claims

Seymour L. Nash, D.D.S., New York

The claim experience of the Joint Liability Insurance Committee of the First and Second District Dental Societies of the State of New York for the period from 1932 to 1956 is analyzed. The committee goes over every claim of significance, and the committee's advice is followed by the insurance carrier. Of the 312 cases reaching the courts, 92.9 per cent were decided in favor of the defendants. The committee recommends that similar bodies be established by dental societies throughout the country. Sixteen principles for a constructive malpractice program are summarized.

The question of satisfactory malpractice and liability insurance at a reasonable premium is rapidly becoming one of the most serious problems facing the practicing dentist in the United States. A greater percentage of an ever-increasing population is availing itself of the skills offered by modern dentistry. Couple this increase in numbers treated with the sharp increase in the general claim-mindedness of the public, and the result is a potentially explosive situation.

Organized dentistry has always served two masters. On the one hand it must answer to its members, practicing dentists who have joined together for scientific study, protection as a group and fellowship. On the other, as collective spokesman for the profession, it upholds the principle of safeguarding the public and its dental health. Throughout the 100 years of the existence of organized dentistry in the United States these interests have never been found to be mutually exclusive. Any discussion must therefore examine the question of malpractice and liability insurance with both these points of view in mind.

In the broad area of dentist-patient relationships the dental society has a vital role to play. In many cases where the relationship becomes fraught with anger and recrimination, the dental society is the first outside agency a patient will turn to. At other times the patient comes to the society on the advice of counsel, seeking to bolster a future legal action against the individual dentist. Whatever the case, when a patient seeks advice, information or even action from a dental society, the group is obligated to give serious attention to the situation.

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It must be recognized that any action which serves to place a single dentist in an unfavorable public light, whether in greater or lesser degree, is reflected on the profession as a whole. Most societies have recognized this principle. In their efforts to keep unpleasant publicity to a mini-

mum, they have established mediation committees, arbitration committees, public relations committees and committees with other names but similar tasks. Where the objectives of the committees' activities have been clearly defined and their methods carefully studied and planned, they have played a constructive role. This type of activity, however, has always had the effect of locking the stable door after the horse has been stolen.

When the work of such committees is evaluated, foremost consideration must be given to the question of the legal responsibilities of the dental society and the dentist in any given problem brought to the society by the patient. Procedures must be carefully studied for the possibility of their being used at a future time in legal proceedings. Arbitration machinery should be prepared so that it is legally binding. If this is not done, either party when dissatisfied with the decision can use the record of the proceedings in further action. At all times and at every step, the advice and counsel of the insurance companies involved and the legal advisers of the society should be sought.

PROGRAM FOR PREVENTION OF MALPRACTICE SUITS

As stated in the preceding, this type of activity is always of a nature which might be called ex post facto. It is a prime adage among health practitioners that the finest way to treat disease is to prevent it. Therefore a program for the prevention of malpractice suits, as well as the simple misunderstandings between the dental practitioner and his patient which lead to strained relationships and bad public relations, is called for.

Therefore, in addition to its responsibilities to the public, the dental society has a much greater responsibility to its members. Efforts in this direction have been legion. One of the most important has been the establishment of continuing education programs that help the dentist keep abreast of rapidly advancing technics and changing procedures. New ideas, fresh discoveries and advanced knowledge are found not only in the technical and scientific side of professional life, but also in the business management aspect. Legal responsibility, office records and the handling of unusual occurrences have become important issues in a modern dental practice. The continuing education program, when it is well-rounded and takes all sides of professional life into consideration, is an important preventive measure in the quest for good dental public relations.

Another aspect of society responsibility to its members is insurance protection. All dental societies recognize that group insurance protection is a prime factor in membership affiliation. Group policies making society membership a prerequisite have been written throughout the United States. Does the society's responsibility to its members end at the point that a group policy is made available to its membership? An examination of dental malpractice and liability experience throughout the country can lead only to a negative answer.

JOINT LIABILITY INSURANCE COMMITTEE

The Joint Liability Insurance Committee of the First and Second District Dental Societies has a long and active record in this field. The committee serves as a liaison between a group of approximately 3,300 dentists who are insured under a group policy and the insurance carrier.[1] It has an active role to play in every claim brought against a member of the group. It has assumed a further function in undertaking an educational program for the dental profession in order to serve dentists better and to protect the interests of the public.

The committee's methods are very simple ones. It meets once each month

alternating between the two district headquarters. It establishes an interview with every member of the group who has a claim pending against him. The dentist is requested to bring with him all his original records pertaining to the cases. These should include roentgenograms, study models, examination and treatment records, prescriptions and correspondence.

The committee's primary task is to determine the legal liability of the dentist in the given situation. The insurance company has agreed to accept the recommendation of the committee as to whether a settlement should be sought or the case carried to litigation. When the committee finds that liability is present, the company is advised to settle with the patient, and the case will go to court only if the monetary demands of the patient are excessive and arbitrary. On the other hand, where no liability exists, the insurance carrier is instructed to fight the case until all legal means are exhausted. The committee has established a principle that where no liability exists, settling cases because of expediency does not help the good name of the profession and leads to future victimization.

The interview with each dentist also gives the committee an opportunity to advise him constructively concerning his records and office procedures and his method of handling this unusual occurrence, at the time it happened and subsequently. This simple discussion, which is closed and confidential, has been of great value in avoiding future suits.

That this program has succeeded is evidenced by the fact that the present premium of its group policy is the lowest available in New York City, in New York State and, as far as we are able to ascertain, in the United States. We have all this despite the fact that New York City is one of the highest rated liability insurance areas in the United States.

The present committee originated in the year 1932. At that time the Insurance Committee of the Allied Dental Council of New York City organized its group malpractice and liability policy. This group became the present Joint Committee with the amalgamation of the Council into the First and Second District Dental Societies. In 1943 the Allied Dental Council Insurance Committee had prepared and published a ten year study of claim experience.[2] As the years have passed and claim experience has grown, the present committee, through its subcommittee on publications and with the cooperation of its consultant professor, S. B. Ackerman, and the insurance brokers,[3] has collated the statistical record of the following 13 years in an effort to note the trends and examine the changes that have taken place.

STATISTICAL STUDY OF CLAIM EXPERIENCE—1932-1956

Tables 1-7 and Figures 1 and 2 contain the information gained from the study of claim experience in this field over a period of almost a quarter of a century. The committee feels that careful study of the past can be of great help in meeting the future.

A comparison of Tables 1 and 2 brings to light a great deal of significant information. The greatest percentage change occurs in the category of extractions, and this is apparent not only in claims filed, which fell from 53 to 34 per cent, but also in amounts paid, which fell from 69 to 48 per cent. It is felt that the introduction of the antibiotics, with the subsequent control of postoperative infection, accounts almost completely for this drop. It should be noted that the number of claims filed because of infections fell from 38.2 per cent of total claims to 0.4 per cent.

A sign of public claim-mindedness is the rise in breach of contract claims from 5 to 28 per cent. A most pleasant change, however, is to be noted in the decline in poor work claims from 14 to 3 per cent.

Table 1 • Summary of claim experience—1932–1942

Principal cause of claim	Number filed	Per cent of all	Number paid	Amount paid	Per cent of total amount
Extractions:					
Infection	431	38.2	77	$ 49,115.70	38.3
Retained roots	61	5.4	21	6,895.50	5.4
Death following	23	2.0	6	16,000.00	10.5
Wrong tooth	22	2.0	11	4,500.00	3.5
Fractured jaw	8	.7	4	3,500.00	2.7
Miscellaneous	53	4.7	20	9,390.50	7.3
Total extractions	598	53.0	139	89,401.70	69.8
Cuts, disks, stones (exclusive of extractions)	86	7.2	66	9,985.50	7.8
Heat and chemical burns	53	4.7	38	8,016.00	6.3
Deaths, nitrous oxide administration	3	.2	2	5,750.00	4.5
Broken needles	15	1.3	5	4,850.00	3.8
Failure to remove rubber drain	1	.1	1	2,250.00	1.8
Breach of contract	57	5.1	8	459.00	0.4
Poor work	165	14.7	16	957.00	0.7
Hemorrhage	19	1.7	3	253.00	0.2
Falling roentgen-ray machine	3	.2	3	675.00	0.5
Miscellaneous*	128	11.8	26	5,550.00	4.2
Total	1,128	100.0	307	$128,149.20	100.0

*Principally small claims less than $500 and frequently less than $10.

This is surely a tribute to dental education, both graduate and undergraduate.

Although the number of claims because of cuts increased only slightly (from 7.2 to 9.8 per cent), the severity of injury has increased greatly. This is proved by the increase in the amounts paid for cuts from 7.8 to 28.9 per cent. The committee attributes this change to the introduction of high-speed technics and the increase in emphasis of crown and bridge procedures in modern dental practice. This trend continues through 1957 and 1958; however, it is hoped that with the introduction of ultra-high speed and smaller cutting tools there will be a reversal.

It is of interest to see the way the range of claims has followed the trend of dental practice through the years. With the increasing emphasis on tooth restoration and the maintenance of the dentition, there has been a reduction in the amount of routine oral surgery. This interest in retention and maintenance has led to the introduction into the statistics of entirely new categories: root canal claims, accidents on the removal of crowns, bridges and inlays and swallowing and aspirating foreign objects. The entire miscellaneous category, although rising slightly from 11 to 16 per cent of claims, has had its very nature changed whereas amounts paid have risen from 4 to 15 per cent.

Finally, in comparing Tables 1 and 2, it is worthy of note that total claims in Table 1 are 1,128 for a ten-year period. Total claims in Table 2 are 1,251 for a 13 year period. The committee feels that only the operation of its educational and investigative programs has kept claims down in the face of an increasing number of dentists in the insured group and an increasing claim-mindedness on the part of the public.

With the increase in public claim-mindedness has come an increasing tendency for juries to award larger verdicts. This, in turn, leads to larger settlements. Table 5 shows that large claims paid (those over $500), as compared to all claims paid, rose from 4 to 23 per cent. The amounts paid in these large claims, in percentage of total amounts paid, rose from 66 to 80 per cent.

A careful breakdown of large claims was made on the 1943-56 statistics. Tables 3 and 4 show cases in which large amounts were paid by either settlement or verdict, and these are broken down into type, number and amount paid. It is of interest to read the category headings, for here in the cold statistics are the major part of the malpractice and liability problems.

The charts and tables prove that the problem of liability and malpractice must continue to receive serious attention. The methods used by this committee represent one successful approach to the question. To repeat, the committee goes over every claim of significance. It interviews the dentist and goes over the history of the case and the dental records. The insurance carrier has agreed to follow the

Table 2 • Summary of claim experience—1943–1956

Principal cause of claim	Number filed	Per cent of all	Number paid	Amount paid	Per cent of total amount
Extractions:					
Infection	5	0.4	2	$ 800.00	0.3
Retained roots	42	3.4	14	5,635.50	2.3
Death following	8	0.6	1	1,250.00	0.5
Wrong tooth	24	1.9	14	7,137.50	3.0
Fractured jaw	11	0.9	7	12,750.00	5.3
Postoperative sequelae; trismus, dry socket, etc.	343	27.4	73	88,128.50	36.6
Total extractions	433	34.6	110	115,701.50	48.1
Cuts, operative disks, stones	123	9.8	92	69,219.80	28.9
Heat and chemical burns	73	5.8	52	9,944.85	4.1
Deaths, nitrous oxide administration	2	0.2	1	1,000.00	0.4
Broken needles	11	0.9	3	310.00	0.1
Failure to remove rubber drain	1	0.1	1	1,000.00	0.4
Breach of contract	349	27.9	30	3,254.00	1.3
Poor work	43	3.4	6	1,189.50	0.5
Hemorrhage	8	0.6	1	1,000.00	0.4
Falling roentgen-ray machine	7	0.6	4	1,365.00	0.6
Miscellaneous:					
Root canal	29	2.3	12	21,068.75	8.8
Swallow, aspirated metals	13	1.0	7	4,166.86	1.7
Accidents removing bridges, crowns	12	1.0	7	1,126.00	0.5
Dentures over roots, teeth	5	0.4	4	2,775.00	1.1
Falling handpieces	5	0.4	5	2,308.00	1.0
Property damage	47	3.8	41	1,238.25	0.5
Miscellaneous*	90	7.2	20	3,940.00	1.6
Total miscellaneous	201	16.1	96	36,622.86	15.2
Total	1,251	100.0	396	$240,607.61	100.0

*Principally small claims less than $500 and frequently less than $10.

Table 3 • Distribution of claims when amounts over $500 were paid—1943–1956

Category	No. paid	Amount paid
$500–$999		
Cuts, operative with disks, stones	20	$12,750.80
Extractions	13	8,300.00
Heat and chemical burns	5	4,000.00
Fall from the dental chair	1	950.00
Breach of contract	1	850.00
Aspirated gold inlay	1	538.00
Fractured root canal file	1	500.00
Total	41	$27,888.80
$1,000–$2,999		
Extractions	14	$19,670.50
Cuts, operative with disks, stones	9	14,950.00
Root canal treatment	3	7,000.00
Deaths	3	3,850.00
Denture over retained roots	1	2,000.00
Aspirated gold inlay and crown	2	3,000.00
Falling handpiece	1	1,500.00
Heart attack after periodontal treatment	1	1,250.00
Heat or chemical burn	1	1,000.00
Rubber drain left in	1	1,000.00
Falling x-ray machine	1	1,000.00
Total	37	$56,220.50
$3,000–$4,999		
Extractions	4	$13,500.00
Cuts, operative with disks, stones	4	12,428.50
Total	8	$25,928.50
Over $5,000		
Extractions	5	$49,875.00
Cuts, operative with disks, stones	2	13,600.00
Root canal treatment	1	12,600.00
Broken needle	1	7,000.00
Total	9	$83,075.00
Over-all total	95	$193,112.80

advice of the committee as to seeking settlement or carrying the case to litigation. The major element in this decision is the question of whether liability does or does not exist.

Giving the final decision to the committee has proved to be a wise choice. It has kept to a minimum the nuisance type of case in which no liability exists, for here the committee refuses to sanction settlement. This has proved to be sound judgment. Table 6 shows that of the 312 cases reaching the courts, 92.9 per cent were decided in favor of the defendant. The success in defending cases which are considered by the committee to be worthy of defense is further evidenced by the fact that the average amount awarded on all cases reaching the courts was only $167.48. Since 92.9 per cent of the cases were won, only 7.1 per cent led to monetary verdicts. This figure is to be compared with the average settlement of $499.60 and the average verdict of $2,375.38.

After careful appraisal of its activity and analysis of its results as exemplified by the data presented in these charts and tables, this committee recommends that similar bodies be established by dental societies throughout the country. The mere provision of insurance coverage is insufficient. A member needs help and support to counteract the destruction of peace of mind which a claim or suit creates. He needs more than an imper-

Table 4 • Distribution of claims when amounts over $500 were paid—1932–1942

Category	No. paid	Amount paid
$500–$999	27	$16,124
Over $1,000	27	68,750
Total	54	84,874

Table 5 • Comparison of claims over $500 to all claims in both studies

Category	'32–'42	'43–'56
Per cent of large claims to all claims filed	4.7	23.8
Per cent of amounts paid in large claims to total amount paid	66.2	80.2

sonal insurance representative to help him over the loss of professional reputation which is a consequence of a malpractice suit.

PRINCIPLES FOR CONSTRUCTIVE MALPRACTICE PROGRAM

Fundamental principles for a constructive malpractice program can be summarized briefly as follows:

1. The program must be based on a long-term plan.

2. The group must be comprised of a certain minimum number of members.

3. The support of the entire membership must be secured. Each individual

Table 6 • Disposition of claims filed—1943–1956

Method	Number	Per cent of total	Amount paid	Per cent of amount	Average amount paid
Closed, no payment	529	42.3	——	—	——
Settled	377	30.1	$188,351.31	78.3	$ 499.60
Verdict for plaintiff	22	1.8	52,256.30	21.7	2,375.38
Verdict for defendant; dismissed or discontinued	290	23.2	——	—	167.48* ——
Pending	33	2.6	——	—	——
Total	1,251	100.0	$240,607.61	100.0	

*Of the 312 cases which have been decided in the courts, 92.9 per cent resulted in decisions favorable to the defendant while 7.1 per cent resulted in verdicts for the plaintiff.

Table 7 • Average claim values—selected causes

Type of claim	Average paid of total claims		Average paid per claim of claims paid	
	'32–'42	'43–'56	'32–'42	'43–'56
Extractions	$ 150	$ 267	$ 643	$1,052
Cuts	116	562	151	752
Burns	151	136	211	191
Death after nitrous oxide	1,915	500	2,875	1,000
Broken needles	323	28	970	103
Breach of contract	8	93	58	108
Poor work	6	27	60	198
Property damage		26		30
Root canal		734		1,869
All causes	$114	$192	$417	$607

must be made aware that it is his program and that he too is injured when a suit is brought against any member of the group.

4. A functioning committee must be established to supervise the program and represent the group before the public and the insurance carrier.

5. Payment of premium by a member of the group is not enough. He must give the program his loyal support and spend some time in learning how he may protect himself and his colleagues.

6. The group must do everything in its power to see that no actual malpractice occurs. This is to be done by policing itself, by making available lectures, clinics and refresher courses, thereby raising the standards of dental practice in the community and by furthering continual instruction in malpractice claims prevention.

7. It is essential that the group secure a reliable insurance carrier.

8. The carrier should give assurance to the group that due regard shall be

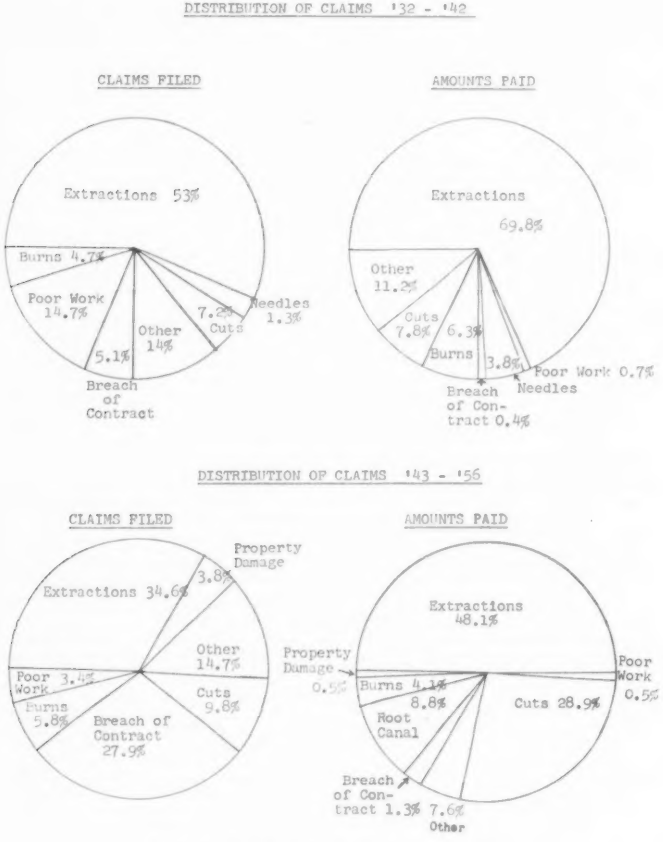

Fig. 1 • Distribution of claims—1932-1956

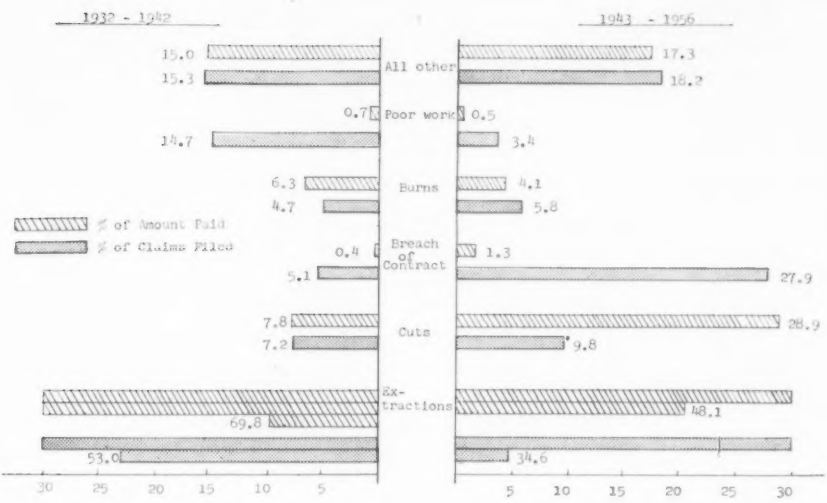

Fig. 2 • Comparison of distribution of claims filed and distribution of total amounts paid for periods 1932-1942 and 1943-1956

given to the welfare of the dental society and the reputation of the member dentist in the disposition of all claims and suits.

9. The carrier should also give assurance that the recommendation of the group regarding underwriting and the acceptance or declination of the applicants shall be persuasive, although not mandatory, on the carrier.

10. The carrier or its agent should not require members of the group to purchase other types of insurance.

11. The carrier should have available at all times telephonic advice by competent consultants on problems regarding dentist-patient relationships.

12. The carrier should employ personnel especially trained in the writing of dental malpractice insurance. The policy should meet all the requirements of individual policy holders.

13. The carrier should provide for investigation and adjustment of claims by personnel who are especially trained.

14. The group must set aside a fund to be used in education and claims prevention activities. In the case of this committee, a portion of the dividend is set aside by agreement for the committee's use.

15. The group must assure the carrier that the cooperation of all its members will be sought.

16. The group must be prepared to pay a sufficient premium for the carrier to make a reasonable profit.

22 West Forty-eighth Street

Prepared for the Joint Liability Insurance Committee of the First and Second District Dental Societies of the State of New York.

1. The Public Service Mutual Insurance Company.

2. Allied Dental Council Insurance Committee. Survey of ten years' experience with malpractice claims. D. Outlook 30:365 Oct. 1943.

3. Nelson and Fanwick, 130 William Street, New York City.

Fluoridation in Europe

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Although interest in fluoridation is widespread in Europe, fluoridation projects are going forward only in six countries —Belgium, Czechoslovakia, German Federal Republic, Great Britain, The Netherlands and Sweden. In many European countries, water fluoridation will be only of limited value because many of the inhabitants do not receive water from a central water system. Therefore, some of these countries are studying the administration of fluorine other than through the drinking water. Opposition to fluoridation is widespread, but once fluoridation is instituted on a large scale in one or two countries in Europe where most of the inhabitants receive water from a central water supply, other countries no doubt will follow suit.

The extensive literature and the widespread field investigations carried out in the United States on the subject of fluoridation of the communal water supplies have interested dental health authorities all over the world. It is not surprising, therefore, that many countries in Europe have initiated their own investigations designed to inhibit dental caries by adding fluorides to the water supply.

It is a truism that what dentistry does in America today will be followed by the rest of the world tomorrow, and it is the purpose of this paper to describe briefly the measures that are in progress in Europe at the present time.

It might well be asked why the European countries have been so long before commencing fluoridation investigations on a large scale. Indeed one might ask why local or national investigations were deemed to be necessary at all in the light of the uniform results obtained from the many investigations carried out in North America. The world has been watching the American field experiments on fluoridation for many years, but it was only when identical optimum results were being received from many different regions of the country over a period of many years that it became apparent that fluoridation had "made its point" and proved that this was a measure of the greatest importance in the fight against dental caries.

Why then should more investigations be necessary in countries outside North America?

One answer, of course, is that the water intake per person varies in different countries according to temperature, and it would be expected that the inhabitants of Italy and Spain would consume more

water than those in less temperate zones, such as Russia and Finland.

At the same time there is an appreciable difference in the eating and drinking habits of many countries, and food containing traces of fluorine, notably fish, which is the staple diet in some countries, might be expected to produce a small variation in the optimum amount of fluoride salt necessary to add to the drinking supply.

A more cogent reason, however, for the almost universal feeling that fluoride investigations should be undertaken, is based on democratic reasoning which says "let us see for ourselves." Such apparent naïvete, however, stems from the serious consideration that it is necessary to gain the support of the authorities and the public before fluoridation can be undertaken on a national scale. The opposition to fluoridation waged by a small but vociferous minority, and in some cases backed by uninformed public opinion, has not been confined to the United States alone. Throughout Europe there has been not a little public opposition tinged with apathy which has made the work of those interested in fluoridation difficult and arduous. This national opposition and apathy in many cases can only be assuaged by clear cut and incontrovertible results of long term investigations carried out by the authorities in each individual country.

One other problem faces the authorities of some countries where many of the inhabitants do not receive a regular tapped water supply. In these cases fluoridation of the water would only benefit a limited number of individuals, and alternative methods of fluoridation have to be found and initiated.

Finally, the question of the safety of water fluoridation on the health of the individual, since it has been raised in one country, will be and is raised in others.

The fact that fluorine is present naturally in the drinking water supply in certain areas throughout Europe, notably in England, Greece, Hungary, Italy, Portugal, Spain, Sweden, Switzerland and the U.S.S.R., presents an opportunity for study and assessment of the ratio of caries in these areas compared with that in areas in which fluorine is virtually absent. At the same time it presents the surest argument, if argument is necessary, on the safety of fluoridation as a public health measure, since in no instance has there been any evidence to show that people drinking water in which fluorine (fluoride ion) in the proportion of approximately 1 ppm is present naturally are less healthy than their fellow men.

The success of water fluoridation in the United States is apparent, but the fight has been won only by continual and widespread research, investigation and education. This pioneer work has been of immense help to the European countries, some of whom are taking full advantage. At the same time a few of the difficulties briefly mentioned will be apparent, and it will be many years before fluoridation of the water supplies will become an accomplished reality in Europe.

EUROPEAN INTEREST IN FLUORIDATION

Although the majority of European countries in one way or another have taken active steps to promote "fluoridation," only six countries, as far as can be ascertained, are actually engaged in the fluoridation of water supplies (Belgium, Czechoslovakia, German Federal Republic, Great Britain, The Netherlands and Sweden).

Alternative methods of fluoridation, in the form of tablets, topical application or implementation in milk or salt, are being undertaken in several countries, notably Austria, Finland, the German Democratic Republic, Hungary, the German Federal Republic, Italy, Switzerland and Yugoslavia.

Although there is no evidence in the remaining countries in Europe that water

fluoridation projects have yet begun, there is ample evidence to show that the subject has been studied and there is reason to believe that investigations may be started in the near future.

In Denmark a Government Expert Committee was set up under the Home Secretary to study the question of fluoridation. The majority recommendation urged that communities be given permission to fluoridate their drinking water if they wish and if they can produce satisfactory control measures. The Home Secretary has not yet acted on this recommendation, but it is expected that the whole question may be regulated by Parliament in the near future.

In Finland topical application of fluoride solutions is used to a limited degree and fluoridation of drinking water is planned in three or four cities.

The problem has aroused great interest in the German Democratic Republic in view of the increasing incidence of dental caries amongst the youth. In Halle, for example, experimental tests with exogenous and endogenous prophylactic fluoride have been carried out, and in Karl-Marx-Stadt the introduction of fluoridation of the drinking water is planned. Since 1950, 3,000 children in Halle have been subject to topical fluoridation with sodium silico-fluoride for six years. Fluoridation by means of tablets is carried out with Government funds as a research measure.

In Hungary water fluoridation projects have been accepted for more than three years in two demonstration centers, Eger (population approximately 35,000) and Gyöngyös (population approximately 20,000). Fluoridation equipment has already been imported for Eger, but in spite of the fact that all the public health and other local authorities have given their consent, the starting of the scheme has been prevented because of the resistance of the chief waterworks engineer. The Waterworks State Board, therefore, has proposed that the equipment be installed at Szolnok (population approximately 50,000) situated some 60 miles southwest of Eger. No approval has been obtained as yet from the State Public Health Authorities to start fluoridation at Szolnok, but the matter is being dealt with by an expert committee. The equipment to be used is a sodium fluoride powder feeder imported from the German Federal Republic. The water at Szolnok is supplied by one main pipeline from the central waterworks filter station. Basic caries data are available at Eger and Gyöngyös as well as at some other neighboring communities to be used as control centers. The prevalence of dental caries is to be established in the near future for Szolnok.

In Northern Ireland certain water authorities have been considering the desirability of providing space for fluoridation plants in the new water undertakings they are planning, whereas in the Republic of Ireland, as a result of a favorable report by a Fluorine Consultative Council, it is understood that the Department of Health is preparing legislation to permit local authorities to fluoridate public water supplies.

In Norway a water fluoridation investigation is expected to commence in the near future. Technical equipment is now being installed and the plans completed.

A study is being made at the present time in Spain regarding the possibility of fluoridating the water supplies.

In Switzerland, the favorable reports on fluoridation in the United States of America have been followed very closely since 1949 by the Swiss Federal Public Health Office. In 1949 the Swiss Dental Association set up a Fluoride Commission to check scientific reports on fluoridation and to investigate the areas where the water contains natural fluorine. In 1952 the Swiss Dental Association passed a formal resolution recommending fluoride prophylaxis, especially the fluoridation of drinking water. Water fluoridation equipment has been ordered by the town of

Aigle (Canton de Vaud), and it is expected that it will start fluoridation very soon. A complete scheme for water fluoridation has been prepared for the city of Basle and its implementation awaits agreement from the municipal authorities. There is also a water fluoridation scheme for the city of Berne. Extensive work has been done by means of fluoridation in tablet form which has already proved the efficiency of this method of administration.

It will be seen, therefore, that throughout Europe active interest is being shown, and in course of time valuable independent data will be forthcoming from many sources.

ACTIVE WATER FLUORIDATION PROJECTS

Belgium • Dental health education, in which fluoridation plays such a major role, is too often hampered by apathy, ignorance and neglect, and it usually is left to a few enthusiasts throughout Europe to work for an ideal which they know is possible to achieve but difficult to attain in their lifetime.

In Belgium it has been left to the initiative of an individual dental practitioner to set up an experimental study in various villages in the district of Namur. Every year clinical and roentgenographic investigations are carried out in two groups of villages, one group acting as control. An exceptionally simple apparatus for adding the fluoride was designed by the engineer of the National Waterworks Society, and it has functioned without trouble since it was installed three years ago. The local authorities of other villages have shown themselves interested in fluoridation projects, and it is hoped that further investigations will soon be started.

Czechoslovakia • Water fluoridation was started in Czechoslovakia over a year ago in two towns. In one town fluoridation in its broadest sense is in progress, whereas in the other it is stated that it is being used experimentally and only small doses employed. In one instance a solid sodium silicofluoride is utilized in the feeder, and in the other a solution of sodium fluoride is employed.

German Federal Republic • In 1953-54 fluorides were added to the drinking water of a suburb of Kassel known as Wahlershausen. The first comparative examinations were carried out in 1953 and again in 1955. Althogether 1,058 children were examined, 523 in the test group and 535 in a control group.

Compared with the test group, the control group has shown an increase of 27.3 per cent in the DMF rate. For each 100 first permanent molars, the test group showed an increase in the DMF rate of 28.9 per cent, whereas the control group showed 36.3 per cent.

There are comparatively few central supplies of drinking water in Germany and, as a result, the main emphasis is being concentrated on the administration of fluoride tablets to school children.

Great Britain • In 1952, on the recommendation of the Medical Research Council, the British government sent a mission to the United States and Canada to study all aspects of fluoridation of water which had been in operation in these countries for six or seven years. The mission reported that it appeared to be a useful means of reducing dental caries in North America, and that it was reasonable to assume that it would be useful also in Great Britain. They recommended that, as a preliminary step, fluorides should be added to the water of some selected areas, and that these should be regarded as study centers.

The Government and the British Dental Association accepted the mission's recommendations, and plans were prepared to put them into effect. A number of authorities had already expressed the wish to introduce fluoridation of their

water supplies and several were included in the selected study centers. These areas were chosen to represent different geographical locations and different types of population and of water supplies. Comparable areas were chosen as controls, water supplies were all carefully surveyed and the equipment most suitable for each individual supply was determined.

Three studies are now in operation. Two, in England and Wales, are the responsibility of the Ministries of Health and of Housing and Local Government, whereas the third, in Scotland, is the responsibility of the Department of Health for Scotland. The addition of fluoride to water supplies actually started in November 1955 in Anglesey and early in 1956 in Watford and Kilmarnock.

The earliest date on which the results of fluoridation can be expected to begin to show is five or six years after the beginning of water treatment. Fluorine has been found to be most beneficial if it is ingested while the teeth are developing and calcifying, that is, during the first eight years of life. The full effect of fluoridation cannot be reliably assessed, therefore, until these teeth which have been subjected to fluorine during the whole formative period have erupted into the mouth and been exposed to the risk of caries for several years. Since fluoridation did not start in any area in the U.K. until November 1955, it is not anticipated that any results will be observed before 1961 at the earliest.

The expert staffs of the Government Chemist's Department, the Ministries of Health and of Housing and Local Government, the Department of Health for Scotland and the Welsh Board are actively participating in the fluoridation studies, the cost being borne by the Health Departments.

Water Treatment • Two types of fluoridation equipment are used: a volumetric solid feeder for supplies pumping water at a rate of more than 7,000 gallons per hour and a solution feeder for smaller supplies. The solid feeder is an American design by Wallace and Tiernan and is equipped with a recorder showing loss of weight of the chemical, sodium silicofluoride, in a hopper. The solution feeder uses a saturated solution of sodium fluoride and in order to prepare this solution it was necessary to develop a continuous flow saturator to handle the powder that is available in Great Britain.

The results obtained by both types of equipment at all three places where fluoridation is being carried out have given figures ranging between 0.9 and 1.1 ppm with an average of 1.0 ppm. Maintenance is being carried out quite readily by the waterworks personnel.

Dental Studies • The dental studies are the responsibility of the Ministry of Health and the Department of Health for Scotland and are all similar in design.

Base-line dental examinations were carried out in fluoridation and control areas on some 12,000 children between the ages of 3 and 15 years, and these are repeated annually. The examinations are undertaken by full and part-time dental officers who work under similar conditions and use a standard type of equipment. To ensure that the same criteria for caries assessment are maintained throughout the studies, special training courses have been held before fluoridation started and on two subsequent occasions.

Each dental officer has the assistance of a trained recorder, and diagrammatic charts are used for recording the dental findings. The condition of each tooth is noted, the exact site and extent of each carious lesion of filling being recorded. The condition of the gingiva, the standard of oral hygiene and the occurrence of any enamel defects are also noted. In addition to the clinical examination, roentgenographic examination is provided periodically for 12 year old children.

The Netherlands • In March 1953 an experimental water fluoridation project was started in Tiel, a small town with a population of 17,000 inhabitants. Culemborg served as the fluoride-free control town.

Sodium fluoride 2 per cent is added in salt form to the water through a volumetric feeder.

No results have been published as yet on this investigation.

Sweden • In 1952 the Royal Swedish Medical Board appointed a body of experts to study all aspects of fluoridation and later submitted a report to the Government expressing the view that the addition of fluorides to the drinking water would be a measure of great potential value in the prevention of dental caries. The Board did not recommend fluoridation as a general measure, but recommended awaiting results of further research on the subject.

A fluoridation study center was set up shortly before the Board's report in the city of Norrköping, which has a population of approximately 90,000. A solution feeding sodium silicofluoride is used in one of the two pipes supplying the city, the other presumably acting as a control. It is understood that up to the present, the caries reduction figures agree with the American figures.

Union of Soviet Socialist Republics • It is understood that fluoridation experiments are taking place on a large scale in the Ukraine. In some areas the natural fluorine content of the water is as high as 6 to 7 ppm, and there is extensive mottling of the enamel.

The fluorine content of the drinking water consumed by the populations of the Tatar and the Mari Soviet Socialist Republics has been assayed, to determine whether conditions were present which would promote chronic endemic fluorosis and to clarify whether fluorine plays a role in the etiology and pathogenesis of endemic goiter.

Water from natural springs, water drawn from the Volga river and the water from several lakes, all used as drinking water, have also been analyzed.

In the Mari Republic, the water contained from 0.05 to 0.23 ppm fluorine, and in the Tatar Republic, from 0.10 to 0.60 ppm. This content is far below the optimum and does not predispose to chronic endemic fluorosis. There is no evidence to show that fluorine at these levels can play a role in the etiology or pathogenesis of endemic goiter.

It has been established, however, that the low fluorine content in the drinking water of the Tatar and Mari Republics promotes an increased incidence of dental caries.

CONCLUSIONS

Although there is widespread interest in fluoridation throughout Europe today, it can be seen that investigations designed to add fluorides to the drinking water supplies are relatively few and spasmodic at the present time. Indeed, it can be said that according to the evidence at hand, the largest study of water fluoridation undertaken by a government appears to be in Great Britain. Although small water fluoridation studies are being carried out in Sweden and Germany, far greater emphasis is being laid in these countries on studying the effects of the administration of fluorides in tablet form (Germany) or in topical application (Sweden).

In many countries throughout Europe, water fluoridation will be only of partial value because many of the inhabitants are not receiving a tapped water supply. It is natural, therefore, that some of these countries are turning their attention to the administration of fluorides other than through the drinking water, and it will be interesting in the future to be able to assess the results of some of the studies which are now being carried out on these alternative methods.

In the main, however, one is conscious

of the resistance shown by many of those who are responsible for the health of the children towards a public health measure which has been shown to be of such value.

There is little doubt that once water fluoridation is instituted on a national scale in one or two countries in Europe where the majority of the inhabitants are receiving a tapped water supply, other countries will follow suit.

Opposition to fluoridation, which causes delay and uncertainty in the minds of the authorities, is unfortunate, but history shows that in the past there has always been opposition to any new and revolutionary health measure designed to benefit the population.

If everybody interested in the health of the peoples of the world, and this includes all those who have opposed fluoridation, would eschew fanatical bias and face the facts which are set out as a result of painstaking research and careful field investigation, this measure could be adopted throughout Europe within a few years.

This paper has shown briefly how little is really being done by European governments in the matter of water fluoridation at the present time in spite of the fact that dental disease is increasing every year.

The great interest in fluoridation in Europe, however, is apparent. In many countries there is much divergence of opinion, but in practically every country there are unmistakable signs that the subject is receiving very serious consideration, and it may not be long before fluoridation is generally accepted throughout Europe as being a public health measure of the greatest importance for the preservation of the teeth.

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Presented as part of the panel discussion on fluoridation, American Dental Association Centennial Session, New York, September 14, 1959.

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Classic Masterpiece on Lead Disease • One hundred and twenty years ago, L. Tanquerel des Planches of the Hospital of Charity in Paris published the results of his investigation on lead diseases. This remarkable investigator, whom A. Hamilton called the "Columbus of saturnism," recorded 2,171 case reports on lead diseases observed at the Hospital during a period of eight years. He included descriptions of occupational histories and clinical analyses. In studying the etiology of the disease he made numerous experiments on animals and performed many autopsies on deceased patients. L. Tanquerel began his inquiries in 1831. Three years later he published a thesis on lead paralysis and finally, 1839, he published the two volumes of his classic masterpiece *Traitès des Maladies de Plomb* (*Treatise on Plumbism*). This work was crowned with the Montyon prize awarded by the Royal Academy in 1841 as the best work in extending knowledge and diminishing the danger of contamination associated with lead disease occurring in industrial plants. . . . L. Tanquerel classified the disease as follows: (1) colic type; (2) arthralgic type; (3) paralytic type, and (4) encephalic type. These forms have an independent existence and have no real or necessary relations except those of their common origin, yet they may coexist. . . . He carefully described the primary effects of exposure to and absorption of lead dust by the respiratory and digestive organs. The first characteristic manifestation of the disease is the leaden discoloration of teeth and gums. He explained that this was due to sulfurated hydrogen evolved in the mouth combining with the lead circulating in the tissues. Priority for the recognition of this sign, therefore, is due to Tanquerel and not to Burton. Other described effects are the specific lead taste, color and odor. . . . Every patient with lead disease observed at the Hospital had an occupational history as a worker in a lead plant. *R. T. Legge. L. Tanquerel des Planches, 1809-1862. Ind.Med.&Surg., Nov. 1959.*

Fluoridation in South America

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Current economic difficulties have hindered the progress of fluoridation in South America. Fluoridation programs are operating in several small towns in Brazil, Chile, Colombia, Paraguay and Venezuela. In Argentina, projects have been approved to fluoridate the waters of four large cities—Buenos Aires, Rosario, Santa Fé and La Plata.

After extensive investigation, begun in the United States by men devoted to dental science, a theory of great significance to the world has been verified. The early investigators in the field were McKay, Black, Bunting, Dean, Arnold, Elvove, Jay and a number of others. These men complemented each other's work in diverse fields and in decisive tests carried out in Grand Rapids, Mich., Newburgh, N. Y., Evanston, Ill., Brantford, Ontario, Canada, and other locales. The facts they had observed were the relative immunity of mottled teeth to dental caries in zones where the water is rich in fluorine. The theory was that waters submitted to fluoridation can give protection against dental caries.

In South America we have followed this meritorious work for more than a quarter of a century and are today able to render homage to our North American colleagues.

Fluoridation is the most promising of the new weapons in the fight against dental disease. Unfortunately, the echoes of the controversies on fluoridation have reached South America, and there also, voices have been raised against it. But the few objectors cannot stop the laws of progress and they will manage only to obstruct preliminary investigation in the short run. First tests have already been started in some countries. Although these are, perhaps, small beginnings, they are valuable as experiences, their principal value being that of example. The extent of prophylaxis of dental caries on large numbers of people is already becoming known through the press, which publishes the latest scientific news. The greatest difficulty, however, has not been public indifference or distrust but general economic circumstances. Almost the whole of South America is suffering from a serious economic depression and from an unbridled inflation, making projects which might require foreign currency difficult to carry out.

There is expectation that Maier and Belack's procedure, which accelerates the solubility of calcium fluoride through the use of a simple device, will make fluoridation more economically feasible. Since calcium fluoride (fluorite, fluorspar) is found and mined in many parts of South America and is the cheapest of fluorine compounds, it can be obtained and used at minimal costs.

There are some locales in South Amer-

ica that are still without a public water supply. Many physicians, biochemists and sanitary engineers believe that an extension of the water supply to those places should be given priority over fluoridation, since it is more important to combat morbidity and reduce infant mortality than to stop dental decay in locales which already have a domestic water supply.

It should not be forgotten that in some regions even the general notions of prophylaxis are very backward, and in others completely unknown. On one occasion it was decided to present a toothbrush and dentifrice to each of the pupils of the schools of a small tropical town so that the children would become accustomed to dental hygiene in their homes, but this experiment failed because the children exchanged them for candy at the shops near the schools. However, once correct instruction had been given, this did not recur.

It should be pointed out also that in various of the southern republics numerous foci of endemic dental fluorosis have been found. When the drinking water carries an excessive amount of fluorine. it can be improved by being mixed to the correct proportion with other waters deficient in fluorine. Thus the natural protection against caries is maintained and the nonesthetic stains and characteristic mottled teeth are avoided.

If all waters contain fluorine to a greater or lesser degree, and some contain an ideal proportion; if fluoridation consists in enriching those waters that are deficient in fluorine until they reach the ideal level; if fluoridation is innocuous to the organism and has proven no detriment to the health of the inhabitants of parts of the world where it exists naturally; and if it is important to readjust the level of a normal element when there is a deficiency, is not the case clear that fluoridation constitutes one of the few rational procedures for combating dental caries?

FLUORIDATION IN ARGENTINA

In Argentina, the projects drawn up and approved by the sanitary authorities or by the respective state or provincial governments to introduce fluorides into the public waters have not yet materialized.

There are three plans in process now: that of the city of Buenos Aires, the federal capital of the republic; that of La Plata, capital of the province of Buenos Aires (including two small neighboring towns); and that of the province of Santa Fé, for its capital city, Santa Fé, and the city of Rosario.

The first mentioned is the most important, because the city of Buenos Aires has a population of 3,800,000 inhabitants. It is situated 34 degrees south of the equator and has a temperate climate. It is on the right bank of the River Plate, and these waters are filtered and treated for public consumption. This water supplies not only the inhabitants of the city proper but also those of surrounding towns in what is known as Greater Buenos Aires. These towns make up an additional two million population.

In September 1957 the provisional government signed a decree which had all the force of a law and which authorized the investment of 450,000 Argentine pesos for the necessary equipment for water fluoridation in the federal capital. It also authorized the incorporation of 7,500,000 pesos into the 1958 budget for the acquisition of fluosilicic acid for the same end.

The daily water consumption in Buenos Aires is around 1,800,000 cubic meters, and it is estimated that this figure will soon reach three million cubic meters with the completion of the work which is to carry water to the surrounding towns.

Fluosilicic acid was chosen for its economy. The calculated cost is one centavo for each cubic meter of water. The serious economic difficulties of the Argentine Republic, however, have forced the

postponement of the plan. In addition, there is the opposition on the part of waterworks officials who consider that the extension of domestic waters to towns in the interior is a more urgent need than fluoridation.

Because of bureaucratic resistance, then, the project has not yet been started, but the existence of the decree-law will compel its undertaking at a more opportune moment.

The second fluoridation plan was agreed upon in April 1958 by the Ministry of Social Welfare and Public Health of the Province of Buenos Aires. This plan will affect the city of La Plata and two small neighboring towns, Ensenada and Berisso, the latter two being industrial towns with working class populations. The three towns are located about 50 to 60 kilometers from Buenos Aires and share a similar climate. The plan has not yet been inaugurated.

The third plan was approved by the government of the Province of Santa Fé in January 1959. This plan will provide public water fluoridation for the cities of Rosario (the second largest city in the Argentine Republic) and Santa Fé. One million pesos were approved for the initiation of this work, and the assistance of the National Administration of the Waterworks was requested. The plan will affect some 770,000 persons.

BRAZIL

The Tenth Brazilian Congress of Hygiene recommended, in 1952, that fluoridation of public waters be undertaken as a prophylactic measure against dental caries. In October of the following year, the Special Service of Public Health (S.E.-S.P.) began the work of fluoridation of domestic waters in Baixo Guandu, a small town in the state of Espírito Santo. Baixo Guandu is situated in the River Doce valley, about 20 degrees south of the equator, and has some 4,000 inhabitants.

Because of the town's high average temperature, only 0.8 ppm of sodium fluosilicate were added to the waters. A dry dosifier was installed to distribute the drug. Hellige's comparer determined the amount of fluorine in the water, and the Sanchis-Scott method was used.

Dental examinations made in 1953 (before the introduction of fluoridation) on 921 children showed a DMF rate of 3.17 for the seven year olds. The DMF rate increased as the age of the group increased, until at age 14, the rate was 11.02. Examinations made three years later showed a reduction in these rates to 2.50 and 8.61 for 7 and 14 year olds, respectively. Six hundred and thirty-six children were examined in 1956. The reduction in the DMF rate for the seven, eight and nine year old groups was 21.1 per cent, 28.2 per cent and 20.4 per cent respectively. In 1956 the cost of fluoridation was estimated at 3.10 cruzeiros (less than two cents) per inhabitant per year.

The second project to be carried out (also through the initiative of the S.E.-S.P.) was in Palmares, a town in the state of Pernambuco with a population of approximately 15,000. This town lies in the tropical zone less than 9 degrees south of the equator.

Fluoridation was begun in February 1957 and the plans were adjusted to follow those carried out in Baixo Guandu, since both towns are affected by high temperatures.

Fluoridation of the public waters in Marilia in the state of São Paulo and in Curitiba, capital of the state of Paraná, was begun at the same time.

A law passed in 1957 in the state of Rio Grande created a committee for water fluoridation. This committee was composed of a chemist, an engineer who represented the public waterworks department and a dentist and a physician from the state health department. The committee has been working very actively since March 1958. It has already arranged its schedule and working plans

which will benefit 27 cities in the state of Rio Grande.

The Brazilian government has authorized a credit of 15 million cruzeiros for the installation of fluoridation in three small towns: Taquara (October 1957), Guaiba (March 1958) and Montenegro (January 1959). All these towns are in the temperate zone in southern Brazil, near the city of Pôrto Alegre, approximately 30 degrees south of the equator. Elsewhere, to the west of Pôrto Alegre, a fluoridation system is being installed in the city of Santa Maria.

The projects scheduled for this year provide for water fluoridation for 14 cities already using municipal water systems. The addition of fluorine (fluoride ion) to all state water networks has been made obligatory by law because analysis of the waters has shown that the fluorine concentration is low, with an average of 0.15 ppm. Dry-type feeders of Brazilian manufacture are used. In all cases crystallized sodium fluosilicate is used.

COLOMBIA[1-4]

Ninety-nine per cent of the population of Colombia suffers from dental caries. There is a shortage of dentists and dental hygienists, and oral hygiene is not taught to the children.

The Interamerican Cooperative Service of Public Health (S.C.I.D.P.) asked the Colombian Department of Sanitary Engineering and Dentistry to study the possibilities of fluoridation of the public water supplies in certain districts in Colombia. The cities of Bogotá, Cartagena, Neiva, Ibagué and Girardot were selected. Because Girardot was considered to have the best conditions for effective water fluoridation, the experiment was to begin there. Girardot is located 130 kilometers from the capital of Colombia and has some 40,000 inhabitants. One of the advantages was that it would be possible for a small number of professionals to make the dental examinations. The city has an excellent water supply and a good laboratory staffed with experienced and responsible personnel. Girardot has a hot climate with a mean temperature of 28°C.

Before fluoridation was begun, a dental examination of some 4,000 children was made. Only 127 were caries free. The DMF rate was 23.17 per hundred. Fillings accounted for not more than 1.83 per cent.

The rate was most alarming for first molars, reaching 69.38 per cent. Of the 16,000 first molars examined, 11,000 had been either lost or decayed by the time of examination.

The water for the town of Girardot comes from the River Magdalena and before fluoridation contained fluorine in amounts varying from 0.1 to 0.2 ppm. It was decided that crystalline sodium fluoride should be added. A saturator which automatically dissolved the salt to a constant concentration of 4 per cent was used.

In May 1953 the fluoridation system was introduced from the aqueduct, and it worked uninterruptedly and without difficulty. At the beginning the dosage was arranged at 1.0 to 1.1 ppm, but in the following year there was some evidence of spots which were possibly originating from the fluoride. The quantity was then reduced to 0.7 ppm, leaving total concentration at 0.8 to 0.9 ppm.

The cost, per year, was estimated at a little more than 11 cents per inhabitant. This figure derives from the cost of the chemical product alone, since the workmen who were already employed in the waterworks now attend to the fluoridation. The head of the department was instructed in fluoridation procedures by the Department of Sanitary Engineering in Bogotá and by the National University.

Dental examinations were carried out annually.

Three years later, in 1956, 1,539 school children in Girardot were examined, and the results showed a 41.56 per cent re-

duction in the DMF rate. The rate of 69.36 per cent for first molars was reduced to 42.24 per cent. These results are due to both water fluoridation and the increased oral hygiene which was the outcome of a program of sanitary education. Dental care remained poor in 1956 as in 1953.

In 1955 two members of the S.C.I.D.P., a dentist and a sanitary engineer, visited the city of Medellín in order to study the possibilities of water fluoridation in that city. In their report, they advised that fluoridation be postponed, since technical conditions were then undetermined, and a failure would have an unfavorable effect on public opinion.

CHILE[5-7]

Water fluoridation in Chile began as a result of a study by a profluoridation committee which met in June 1952 on the initiative of the School of Health. The committee was made up of members of the staff of the School of Health, the Administration of Public Waters, the National Health Service and the Dentists' Academy of Chile.

The National Health Service started an educational campaign, and the dental department of the Health Service made a technical study and later helped to compile data on school children.

Studies carried out by the Administration of the Sanitary Works showed that fluorine concentration in the water was high in the north and gradually decreased toward the south. During the same period, studies conducted by the School Dental Service established that the rate of caries was greater in the south, gradually growing less toward the north. These figures helped to point up the direct relationship between the presence of fluorine and dental health.

This evidence, as well as results obtained in the United States, led to the fluoridization of the drinking waters of Curicó, a small city near Santiago. The water of this town was deficient in fluorine, as was that of nearby San Fernando which was to be used as a control town. Curicó has a mean temperature of 19°C and a population of 27,000.

Fluoridation was started in September 1953. Sodium fluosilicate was distributed with a dry dosifier in a concentration of about 1 ppm. Hellige's comparer was used.

Before the program was started, 1,279 school children in Curicó and 748 in San Fernando were examined. A similar rate of dental caries was found in both places.

Three years later, 3,060 children in Curicó and 1,680 in San Fernando were examined. These belonged to both state and private nursery, elementary and secondary schools. The examining team was composed of four dentists and two assistants.

The DMF rate in San Fernando, the control city, showed no great variation between 1953 and 1956, but in Curicó where fluoridation had been in effect, the rates of 48 per cent, 48 per cent and 25 per cent for children of three, four and five years respectively were reduced. For these same ages the proportion of children without caries jumped from 8.6 per cent to 27.0 per cent in Curicó, whereas in San Fernando the figures went from 8.4 per cent to 15.0 per cent.

After the success of the test in Curicó, the Dental Department of the Chilean National Health Service worked out a more complete plan for public water fluoridation in an effort to lower the high index of dental caries in the population.

With the exception of the northern provinces where the water contains from 0.2 to 0.8 ppm of fluorine, the water in the rest of the country is almost totally lacking in this element.

At the present time the following cities are working on a fluoridation program: Curicó, Talca, Punta Arenas and Población Dávila.

The cost of the national program of fluoridation, including both equipment

and installation, is 230 million Chilean pesos. The cost of the sodium fluosilicate, amortization, interest and administration is an additional 99 million, making a total of 329 million Chilean pesos. This plan is dependent on the resources obtained by the National Health Service.

PARAGUAY

Asunción, the capital of Paraguay, is situated on the River Paraguay, some 25 degrees south of the equator, and until recently, had no public water system. The company which is completing the installation of the water system is constructing a modern plant with a distribution network to include fluoridation. Fluoridation was expected to begin in September of 1959.

PERU[8]

The General Administration of Health of Peru is currently engaged in introducing water fluoridation in a section of Greater Lima, the capital city.

URUGUAY

In October 1958, the Departmental Advisory Committee of the city of Montevideo asked the mayor of the city of Buenos Aires for advice on water fluoridation that might be used in the installation of a system in Montevideo. The Argentine Ministry of Public Health has already sent all the pertinent details to Uruguay.

VENEZUELA[9-10]

In an epidemiologic investigation carried out in Guanare by the Dental Division of the Ministry of Health and Social Welfare, on some 1,016 school children of ages 6 to 18, it was found that the six year old group had six times as many carious lesions as any of three significant sampling groups of the same age in the United States.

Since 1952, the Ministry of Health and Social Welfare and the Institute of Sanitary Works have had experimental fluoridation functioning in the city of Guanare, with the intention of establishing the best routine procedures for use by the technical personnel of the aqueduct. No results have been published as yet.

There are locales in Venezuela where the population suffers from dental fluorosis, and Engineer Isava has drawn a map of the country showing the geographical distribution of those waters which contain fluorine naturally and those which are deficient in this element. In Lagunillas, in the state of Zulia, steps have been taken to control water which is overly rich in fluorine.

It has been calculated that in order to fluoridate the waters of Caracas, the capital city, which uses about 300,000 cubic meters of water daily, 500 kilograms of sodium silicofluoride would be required, costing about 400,000 bolivars annually. The fluoride could be obtained as a subproduct from the superphosphate mills already existing in the country.

CONCLUSIONS

Fluorine is a normal element of water, and is found in all waters in a greater or lesser degree. Some waters possess it in ideal proportion and these have shown prophylactic properties against dental caries.

Fluoridation consists in adding fluorine (fluoride ion) to waters deficient in fluorine. Fluoridation constitutes one of the few rational procedures in the fight against dental caries yet discovered. Several South American countries have already adopted the process. Full development of fluoridation programs has been restricted only by the existence of other, more urgent problems, such as sanitation

and an economic situation which precludes the application of fluoridation on a large scale.

In several small towns in Brazil, Chile, Colombia, Paraguay and Venezuela, fluoridation is being introduced. In Argentina, fluoridation projects for four big cities (Buenos Aires, Rosario, Santa Fé and La Plata) as well as for some smaller towns have been studied and approved. Peru, also, is studying fluoridation of the public waters of Lima, and this plan is making headway. The municipal authorities of Montevideo, Uruguay, have asked the authorities in Buenos Aires for details of the plan which has been prepared for the Argentine capital.

South America has not remained indifferent to the advances of dental science; however, current economic circumstances have hindered progress in health and sanitation.

Cangallo 1143, Depto. 37

Presented as part of the panel discussion, "Fluoridation," American Dental Association Centennial Session, New York, September 14, 1959.

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College Education • In the English language we have many forceful statements of the problem which disturbs all teachers: "You can lead a horse to water but you can't make him drink." Francis Bacon observed that "the best part of a man's education is that which he gets for himself." Gibbon, ruminating on the folly and lack of cultural interests of so many well-educated Roman emperors, concluded that "the power of education seldom has any efficacy save in those happy dispositions where it is almost unnecessary." . . . The general resistance to cultural influences, noted by keen observers for two milleniums, and the antagonism to culture peculiar to the United States may make some feel that it is hopeless to expect young persons to benefit from an opportunity to take additional college courses during the years they spend in school of engineering, law, business, medicine or dentistry. These doubters will feel that those persons whose curiosity about the humanities and social sciences has not been awakened by school, family, friends or newspaper and magazine articles, by the time they are 18 years of age, are not going to have any real interest in such topics while seeking to get ahead in professional courses. The doubters will recall that many highly cultured practitioners have had no college courses at all. . . . The current system of selecting students for professional schools rarely places much value on the curiosity and zeal for self-education which, along with having cultured parents and spending one's childhood and adolescence in a cultured neighborhood, form the real basis for an interest in the great traditions and in the cultural growth. . . . Overcrowded schedules and busy professional lives make it certain that only those students who have curiosity and whose interests have been directed into cultural fields before they go to college will show any real cultural improvement during the late teens and twenties. *William Dock, Curiosity, Culture and Curricula. J.A.M.A. 172:643, February 13, 1960.*

Joseph B. Weeden
CALIFORNIA

Julian M. Dismukes, Jr.
KENTUCKY

Bernard A. Cohen
MISSISSIPPI

State Dental Association Presidents
1960

Victor B. Keltgen
NORTH DAKOTA

Keith DeVoe
OHIO

F. J. Fernandez
PUERTO RICO

Moses H. Thatcher
UTAH

Weeden, Joseph Benjamin President of the California Dental Association and a general practitioner in Palo Alto. Dr. Weeden is a graduate of the University of California School of Dentistry (1927). He has held membership since 1936 in the American Institute of Oral Biology, and has served as instructor both at his alma mater and at Stanford University where he taught advanced first aid courses. Dr. Weeden is a member of Xi Psi Phi and of the Menlo Circus Club, Palo Alto Club, Olympic Club (San Francisco) and the Menlo Country Club. His hobbies include almost all outdoor sports.

Dismukes, Julian M., Jr. President of the Kentucky Dental Association. Dr. Dismukes graduated from the University of Tennessee College of Dentistry in 1943. He is a general practitioner in Paducah, and is both the grandson and son of dentists. Dr. Dismukes is a member of the American Legion, Forty and Eight and the Western Kentucky Sportsmans Club. Married, he is the father of two children—Julian Macon, 15, and Philip Carlisle, 9. His chief interest is working in organized dentistry, and his hobbies are reading, fishing and hunting.

Cohen, Bernard A. President of the Mississippi Dental Association. Dr. Cohen is a general practitioner in Jackson. He attended Vanderbilt University and the University of Tennessee College of Dentistry, and received both a B.S.D. and a D.D.S. in 1935 from Northwestern University Dental School. Dr. Cohen holds membership in the following organizations: Jackson Dental Study Club; American Society of Dentistry for Children; Mississippi Society for Clinical Hypnosis; American Society for Clinical Hypnosis, and the advisory council of the University of Mississippi. Dr. Cohen is a member of the dental staff of the University of Mississippi Medical Center. Married, he is the father of three children—Marilyn Sue, 11, Harriet Leigh, 8, and Deborah Lou, 4. From 1940 to 1946 he served as major in the Army Dental Corps, and holds the American Defense Service Medal, European-African-Middle East Campaign Medal with three battle stars, and the Bronze Star Medal.

Keltgen, Victor B. President of the North Dakota State Dental Association. A general practitioner in Fargo, Dr. Keltgen received his D.D.S. from the University of Minnesota School of Dentistry in 1939. He has held all offices in his district dental society and has served as secretary of the state association. Dr. Keltgen is a bachelor. His hobbies are hunting, sports and retriever dog trials.

DeVoe, Keith President of the Ohio State Dental Association and an oral surgeon in Columbus. Dr. DeVoe received his D.D.S. degree from Ohio State University College of Dentistry in 1927. He is a member of his university's alumni advisory board. Dr. DeVoe has served as secretary, vice-president and president of the Columbus Dental Society. He is a member of the American Society of Oral Surgeons, the Great Lakes Society of Oral Surgeons, and is a Fellow of the American College of Dentists. He is a member of Sigma Alpha Epsilon, Xi Psi Phi, and of the Scottish Rite and Freemasons. Married, Dr. DeVoe is the father of two sons, Keith, Jr., and John Stephen. Dr. DeVoe's chief hobby is farming. He is a colonel in the U.S. Air Force Reserve.

Fernandez, F. Jose President of the Puerto Rico Dental Association. Dr. Fernandez is a general practitioner in Humacao. He received his B.S. from Georgetown University and his D.D.S. from that University's School of Dentistry. He is a Fellow of the International College of Dentists and a member of Psi Omega and of the Rotary Club. From 1955 to 1957, Dr. Fernandez served with the U.S. Air Force at the Air Force Base in Tampa, Fla. He is an instructor at the University of Puerto Rico, School of Dentistry. Dr. Fernandez is married and the father of three children—Gloria Jean, 6, Juan, 3, and Jose Luis, 3. His hobby is golf.

Thatcher, Moses H. President of the Utah State Dental Association and a general practitioner in Salt Lake City. Dr. Thatcher received his B.S. degree from Utah State University in 1929 and his D.M.D. from the North Pacific College dental school in Portland, Ore., in 1933. He holds membership in the University Club, Fort Douglas Hidden Valley Country Club, Delta Sigma Delta, Sigma Chi, and Gyro International. Married, he is the father of two—Mrs. Thomas Carn, 27, and Spencer, 25. He has three grandchildren. His hobbies are golf, hunting, fishing, dancing and research.

editorials

A dentifrice enters the therapeutic field: a comment from the fourth estate

Last month's announcement by the Council on Dental Therapeutics that it recognizes the usefulness of Crest toothpaste as a caries preventive agent precipitated—as it should—an avalanche of inquiries from both the public and the profession. Also—as might be expected—it initiated a torrent of comment in the public press of varying degrees of substance. One of the most discerning of such comments was one which is reproduced below. It was published August 4 by the *Washington Post*. THE JOURNAL is indebted to that newspaper for its expression of confidence and also for presenting so ably the attitude of the American Dental Association on a subject of such vital importance to public health.

PROGRESS AGAINST DECAY

Many persons must have blinked and looked again when they read that the American Dental Association had given its blessing to a commercial toothpaste—Procter and Gamble's "Crest." The brief statement in the Association's *Journal* to the effect that "Crest" has been found of "significant value" in preventing tooth decay, "when used in a conscientiously applied program of oral hygiene and regular professional care," may be expected to bring a clamor from all the other makers of toothpaste for recognition of their product. But the ADA's rather startling announcement does not mean that it has suddenly plunged into the endorsing or advertising business.

Behind this innovation is many years of research by the Council on Dental Therapeutics. Its function is to keep the dental profession and the public informed as to drugs, chemicals and devices that may be useful in the treatment of dental ailments. The Council is not concerned, of course, with rival claims as to which toothpaste produces the greatest degree of "whiteness" or contributes to the happiest smiles. Its interest lies rather in the prevention of decay. Having satisfied itself that the product mentioned has proved its value in reducing caries, the Council apparently felt that it had an obligation to share its knowledge with the profession and the public.

This is a service of substantial value. It supplements the good work of the Dental Association in the fight for fluoridation of city water supplies—a fight not yet wholly won—and for

the use of fluoride solutions on children's teeth. The third weapon against decay that has now been recognized also contains a substance known as "stannous fluoride."

It should not be supposed, however, that this favorable nod to "Crest" is an unmixed blessing to its producer. Procter and Gamble will be able to cite the findings of the Council on Dental Therapeutics, but only in the Council's own restrained and unglamorous language. Any soaring into ethereal realms would bring a quick repudiation from the organized dentists. It is well to remember too that the door is wide open for all producers of toothpaste to come up with a product that can prove its worth in reducing decay and that the currently favored product will have to undergo repeated testing in order to hold its place.

The twelfth annual National Science Fair program gets under way

This month approximately ten million high school pupils will return to their classrooms and studies. Of those who are graduated from high school, some three and one half million will seek additional education. Of those who annually enter college about thirty-six hundred will enter dental school. Of that number only 10 per cent, prior to entering high school, will have chosen dentistry as a career. The remaining 90 per cent are drawn to dentistry by some means or manner during their high school or college years.

Today one of the best means of drawing more young qualified students to dentistry is the National Science Fair program which this month, for the twelfth successive year, gets under way in hundreds of American high schools. Sponsored nationally by Science Service it is activated locally by public-spirited educators and industrial and professional leaders. Representatives of these groups encourage students to prepare exhibits on some scientific subject. The winners of the local contests compete for state awards and the winners of the state contests compete for national honors. Through the preparation of these scientific projects, thousands of youngsters develop their capacities for inquiry and learning and at the same time increase their knowledge of the different professional fields into which their particular scientific excursion has led them.

The American Dental Association recognizes the potentials of Science Fairs. In 1958 it recommended that dental societies take an active interest in such projects. It has provided dental societies with information on how to initiate a science fair program and it has furnished some 50,000 high school teachers with suggestions for dental science projects.

Fifty dental societies in 25 states are now participating in some form of science fair program. Last year two high school pupils—winners of the National Science Fair dental awards—were guests of the Association at its Centennial Session in New York. This year the Association made four national awards, and two of the winners

will display their exhibits at the Association's annual session in Los Angeles next month. In New York the Dutchess county regional science fair was motivated by the local dental society. In Missouri, the St. Louis Dental Society and the city's two dental schools cooperated in a successful science fair; two St. Louis youngsters have received a trip to the Association's meeting in Los Angeles in recognition of their interest in dental science. What these dental societies have done, others can do as well, or better.

The Association, including its 495 constituent and component societies, has a great responsibility in increasing public understanding and appreciation of dentistry and also in attracting more qualified entrants into the profession. The Science Fair program is a simple and effective method of accomplishing both purposes. Dental societies and individual members of the profession would do well to become actively identified with it.

HOPE:
Health opportunities for people everywhere

On the twenty-first of this month the USS Hope, floating symbol of Project Hope, a principal activity of the People-to-People Program, is scheduled to sail for Indonesia. For the past six months the vessel—formerly the Navy's 15,000 ton hospital ship Consolation—has been undergoing extensive alterations in preparation for a year long trip to countries in southeastern Asia. Its permanent professional staff will consist of some fifteen physicians, seven dentists and twenty nurses plus technical assistants. The permanent staff will be supplemented by a small group of practitioners rotated at four month intervals.

The American Dental Association, the American Medical Association and several other national health, welfare and social organizations have endorsed and financially supported Project Hope as have a growing number of private practitioners. Dentistry is represented in the Project by Lester W. Burket, chairman of the Council on Dental Therapeutics of the Association and dean of the School of Dentistry of the University of Pennsylvania, Harry Lyons, former president of the Association and dean of the School of Dentistry of the Medical College of Virginia, Obed H. Moen, president of the Fédération Dentaire Internationale, and Carl L. Sebelius, former dental health officer of the World Health Organization.

The primary purpose of Project Hope (Health, Opportunity for People Everywhere) is to bring the skills and technics of America's health professions to the people of less fortunate countries so that they can adapt them to their own environment, their own needs and their own way of life. The USS Hope, symbol of America's doctrine of good will, is a floating medical center.

It will serve as a treatment center, a training school and an operating base from which medical, dental, nursing and sanitary teams can carry to health workers in the interior of the visited countries the latest, most practical health aids.

Project Hope—prime function of the People-to-People Health Foundation—is a working example of a basic American belief—a belief that better understanding among peoples of the world can be achieved on a personal level through friendship, through sharing knowledge, and through helping others to help themselves. This belief, this doctrine, this philosophy is one that must be understood by all nations of the world. Project Hope will help do so.

Never has it been so urgent for all segments of the American people to unite in spreading America's good-will policy throughout the world. Never has there been a better carrier than the good ship USS Hope to bring that message to less fortunate countries. Three and a half million dollars is needed to operate the ship for the coming year. More than a million dollars has been donated to date. Consequently, much more is needed. Dentists who wish to contribute to this international good will—good health—effort may do so by sending their tax deductible donations to William B. Walsh, M.D., president of the People-to-People Health Foundation, Washington, D.C.

news of dentistry

Association Affairs

SCIENTIFIC PROGRAM COVERS WIDE RANGE OF SUBJECTS

Almost every subject of interest to general practitioners and specialists in the field of dentistry is included on the scientific program of the Association's annual session in Los Angeles October 17-20.

Of wide current interest will be a panel discussion of stimulated tumors in oral tissues, to be moderated at 10 A.M. Tuesday, October 18, by James English. Barnet M. Levy will preside. Speakers and their topics are: William G. Shafer, experimental tumors of the salivary glands; Marvin Burstone, histochemistry of oral cancer, and Robert Gorlin, the Willmar, Winona and Marshall studies—pilot oral cancer detection program.

Other interesting panel discussions scheduled include one on practical restorative procedures at 10 A.M. Wednesday, October 19. Drexell A. Boyd will preside and the moderator will be Robert B. Wolcott. Charles Pincus will discuss the selection and use of anterior restorations, Rafael Nadal will talk on cavity preparation—condensing and finishing as factors affecting the amalgam restoration, Fredrick Hohlt's talk will be on clinical procedures for indirect gold restorations, and James P. Vernetti will discuss foil and mat gold restorations.

Partial dentures will be the subject of a panel discussion at 2 P.M. Monday, October 17, over which S. Howard Payne will preside and which he will moderate. The three areas to be considered will be broken stress partials, by Clawson Skinner, precision partials by Melburn Morrison, and clasp partials by Victor Steffel.

S. Howard Payne will preside over a panel discussion on complete dentures opposing partial dentures at 2 P.M. Tuesday, October 18, with Fred N. Harris moderating. Benjamin S. Oesterling will discuss diagnostic factors; Arthur E. Aull will speak on jaw relation records and occlusion, and Jack Werner's topic will be rebasing and servicing complete upper and partial lower dentures.

STATE OFFICERS TO CONFER AGAIN AFTER TWO YEARS

After a lapse of two years the Conference of State Officers of the Association has been re-established and will be held Sunday, October 16, at the Statler Hilton Hotel, Los Angeles. Last year's conference was bypassed because of the Centennial Session.

Association President Paul H. Jeserich will welcome participants to the conference over which Carl V. E. Cassel, secretary of the Minnesota State Dental Association, will preside. Thomas D. Holder, secretary-treasurer of the Oregon State Dental Association, will serve as vice-

president of the conference which will begin at 9 A.M., and Alvin B. Coxwell, Jr., executive secretary of the Kentucky Dental Association, will act as secretary.

Discussion on the threat of illegal dental practice will be conducted by three speakers. George D. Dore, Jr., president-elect of the Washington State Dental Association, will talk on the initiative and referendum; Fritz A. Pierson, Eleventh District Trustee and secretary of the Nebraska Dental Association, will speak on the public relations and the professional relations problem, and Mr. Bernard J. Conway, assistant secretary, Legal Affairs, A.D.A., will discuss the legislative and enforcement problems.

J. Eugene Ziegler, chairman, Council on Dental Trade and Laboratory Relations, will speak on the accreditation of dental laboratories, and Don W. Gullett, secretary of the Canadian Dental Association, will give the Canadian viewpoint on auxiliary dental personnel.

After the election of officers and a buffet luncheon, the conference will adjourn.

LABORATORY ACCREDITATION DISCUSSED BY WORKING PARTY

Administration of the program for accreditation of commercial dental laboratories should be placed at the national level, according to unanimous agreement reached at a working party at the A.D.A. Central Office.

On August 6 and 7, representatives of the American Dental Association and the National Association of Dental Laboratories met to continue their discussions of the program. Mr. Homer Dickson, chairman of the N.A.D.L. Professional and Trade Relations Committee, served as chairman for the meeting.

Tentative agreement also was reached in two additional areas of discussion: that the purpose of the program is to assist the dental profession in its continuing efforts to improve the quality and efficiency of the dentist's services to the public, and that accreditation be based on five specified minimum requirements.

Work party groups composed of representatives of both associations will meet in mid-November to explore further the type of agency to which the administration of the accreditation program will be entrusted. The working parties will consider the possible formation of a national dental laboratory accreditation commission composed of representatives of the profession and the industry.

The conferees agreed that consideration also will be given at the November meeting to the development of criteria and methods.

Representatives of the National Association of Dental Laboratories at the August meeting were: Messrs. Homer Dickson, Horace J. Denner, Nathan Cooper, Don Neuenschwander, Paul A. Slone and Kelley E. Griffith.

The American Dental Association representatives were: J. Eugene Ziegler, Herbert L. Bunker, George H. Fitz, Harold Hillenbrand, Shailer Peterson, Walter E. Dundon, Mr. Bernard J. Conway and Mr. Ben F. Miller, III.

Mr. Bernard J. Beazley, former secretary of the A.D.A. Council on Dental Trade and Laboratory Relations, attended the meeting as a consultant.

DENTAL EDITORS TO VIEW 'NEW LOOK' IN SCIENCE WRITING

Modernization of dental publications will be the theme of the Conference on Dental Journalism Saturday, October 15, at the Statler Hilton Hotel, Los Angeles, sponsored by the American Association of Dental Editors.

"The New Look in Science Writing" is the title of a talk to be given by Victor Hall, M.D., head of the department of physiology, Medical Center, University of California at Los Angeles. Dr. Hall will speak at the afternoon session of the conference and will be followed by Mr. Robert Cuttin, liaison director of Pacific Press, Inc., who will talk on modern magazine editing, and Mr. Ray Thomp-

son, art director of Pacific Press, Inc., whose speech is entitled "Illustrations Steal the Show."

The morning session will be devoted to a business session and will be followed by lunch. President Lon W. Morrey, editor-in-chief, American Dental Association, will preside, and will give the president's address at the beginning of the afternoon session, which will be presided over by Miss Belle Fiedler, president-elect.

Gerald D. Timmons, dean, School of Dentistry, Temple University, will give the address at the evening session after a dinner. Dr. Timmons will speak on "Communications: Editors and Educators Share a Common Problem." Vice-president J. C. A. Harding will preside, and will present the William J. Gies Award to Ascher L. Jacobs, associate editor of the *Illinois Dental Journal*, for his editorial appearing in the April 1959 issue entitled "Dentistry and Apathy."

TWO CHANGES ANNOUNCED ON REFERENCE COMMITTEES

Association President Paul H. Jeserich has appointed to the Reference Committee on Hospital Dental Service Arthur W. Kellner, Hollywood, Fla., and Brig. Gen. Clarence P. Canby, director of dental activities at Walter Reed Army Medical Center, Washington, D. C., to replace Herbert O. Hoppe and Charles W. Lokey, resigned. Dr. Kellner will serve as chairman of the committee.

TWO ALTERNATE DELEGATES TO SWEDISH CENTENNIAL SESSION

Association President Paul H. Jeserich appointed Manley Michaels of Washington, D. C., and B. Edwin Erikson, also of Washington, alternate delegates to the Centennial Congress of the Swedish Society which took place August 17-20. They replaced Charles Freeman, Evanston, Ill., and Harold Ray, San Francisco, deceased.

Delegates to the Congress were Dr. Jeserich, Harold Hillenbrand, Association secretary, and Obed H. Moen, chairman of the Association's Council on International Relations and president of the Fédération Dentaire Internationale.

VELMA CHILD FIRST COUNCIL ON JOURNALISM SECRETARY

Mrs. Velma Child, executive assistant in charge of production in the Office of the Editor of the Association, has been appointed part-time secretary of the Council on Journalism. This is the first time the Council has had a secretary.

Mrs. Child, a member of the Association staff since 1935, attended Northwestern University School of Journalism. She joined the A.D.A. staff in the Bureau of Public Relations, then under the direction of Lon W. Morrey, present editor-in-chief. For the past 13 years she has held her present position on the editorial staff.

Mrs. Child, who assumed her new duties June 1, will continue as production chief in the Office of the Editor.

STATE SECRETARIES' MEETING WILL INCLUDE ATTORNEYS

Dental society attorneys have been invited to attend one day's session of the annual State Secretaries' Management Conference to be held November 17-19 at the Central Office in Chicago.

President-elect Charles H. Patton will greet the participants of the conference on Thursday, November 17. Papers and discussion that day will center on (1) litigation involving the unauthorized practice of dentistry; (2) litigation involving fluoridation; (3) litigation involving professional liability, and (4) dental society action involving membership rights.

Friday's session will be a continuation of the 1959 conference, centering on the problems of component societies and completing the outline of material to be included in the forthcoming manual for

component societies. Speakers at this meeting will include Harold Hillenbrand, Association secretary; C. Gordon Watson, assistant secretary; Gory N. Casto, Jr., assistant secretary, and Mr. Heinz Kuehn, acting director, Bureau of Public Information.

The closing session on Saturday will be devoted to general discussion. General chairman of the conference is Dr. Watson.

NATIONAL RESEARCH COUNCIL NAMES SHOLOM PEARLMAN

Sholom Pearlman, secretary of the Association's Council on Dental Research, has been appointed a member of the National Research Council to represent the American Dental Association in the Division of Medical Sciences for a period of three years beginning July 1, 1960.

HOSPITAL DENTAL SERVICE INSTITUTE LISTS SPEAKERS

Speakers and their topics scheduled for the Advanced Institute on Hospital Dental Service November 29-December 1 at the American Hospital Association in Chicago indicate this will be one of the most interesting and thorough such conferences ever held.

Already scheduled to speak are J. Ted Howell, M.D., associate director, Henry Ford Hospital, Detroit, whose topic will be the hospital in the total health program with emphasis on dental care; Saul Levy, dental director, Michael Reese Hospital, Chicago, on how to establish a dental service; Frank W. Wentz, chairman of the department of periodontics, Loyola University School of Dentistry, Chicago, on the importance of oral tissues in the early detection of systemic diseases, and Leland Weyer, dental director of the Division of Dental Resources of the United States Public Health Service and Mr. John Hollweg, Public Health Service architect, both of Washington, D. C., who will speak on physical facilities, planning and equipment.

The third conference on Graduate Training in Oral Surgery, sponsored by the American Society of Oral Surgeons, will be held on Monday, November 28, preceding the Institute, at the same place, the headquarters building of the American Hospital Association. The conference is not a formal part of the Institute but the American Society of Oral Surgeons invites all participants in the Institute to attend, in the belief that it will be a helpful introduction. Information on this conference can be obtained from the Society at 840 N. Lake Shore Dr., Chicago 11.

The Advance Institute is conducted by the American Hospital Association in cooperation with the American Dental Association, and is sponsored by the Tri-State Hospital Assembly, the Illinois Hospital Association and the Chicago Hospital Council.

Retirement point credits for Armed Forces Reserve Officers will be awarded for all those Reserve officers in attendance at the Institute for the following sessions:

On Tuesday, November 29: administration of dental services; responsibility of chief of dental service, and in-service training program for junior staff.

On Wednesday, November 30: the dental department as a diagnostic service for the hospital.

BUREAU HAS NEW SERIES OF SMALL, COLORFUL BOOKLETS

A second series of four small leaflets has been published by the Association's Bureau of Dental Health Education. The leaflets are designed to be included with recall cards and statements. They also may be given out at P.T.A. meetings and county and health fairs. Dental societies may wish to consider purchasing the leaflets in quantity for distribution during National Children's Dental Health Week.

"Smile, Judy!" emphasizes the importance of space maintainers in preventing orthodontics problems. "What You Can't

See . . ." explains why it is necessary to replace an adult's extracted teeth with a bridge. "The High Cost of Dental Neglect" points out that it is dental neglect, not dental care, that is expensive. "Today Kathy Is 3" stresses the value of dental care for young children.

The leaflets may be purchased individually or in sets of four. Prices are: (100 leaflets) $0.90; (500) $3.50; (1,000) $6; (5,000) $25. Orders should be sent to the Order Department, American Dental Association, 222 E. Superior St., Chicago 11.

Louis M. Cruttenden

LOUIS M. CRUTTENDEN DIES; FORMER ASSOCIATION AIDE

Louis M. Cruttenden, 66, who was for 12 years assistant secretary of the Association before his retirement December 31, 1959, died August 8 in Berkeley, Calif.

A graduate of the University of Minnesota College of Dentistry, Dr. Cruttenden entered private practice in Minnesota after serving as a 1st Lieutenant in the Dental Corps of the famed Rainbow Division in World War I. He was president of the St. Paul District Dental Society and secretary of the Minnesota State Dental Association from 1931 to 1947, at which time he joined the staff of the American Dental Association in Chicago. For many years he had served as a member of the Association's House of Delegates.

Dr. Cruttenden was made a Fellow of the American College of Dentists in ceremonies held last fall in New York at the time of the Centennial Session.

MEL GARBAR REJOINS STAFF OF INFORMATION BUREAU

Mr. Mel Garbar, formerly assistant director of the Association's Bureau of Public Information, who resigned his position in the spring, rejoined the staff August 10 in the same capacity. Mr. Garbar has been publicity director of Durkin and Rader, Chicago public relations and advertising agency, and public relations associate at the Armour Research Foundation of Illinois Institute of Technology.

Legislation

F.T.C. BANS COLGATE DENTAL CREAM 'GARDOL' ADVERTISING

A tentative order which would prohibit the Colgate-Palmolive Company from advertising its tooth paste with "Gardol" as "forming an invisible shield around your teeth" was issued August 4 by an examiner of the Federal Trade Commission.

Mr. Leon R. Gross denounced as false, misleading and deceptive a Colgate tooth paste television commercial depicting a coconut being hurled toward a person behind a glass shield.

The dentifrice company said in a statement it would appeal the examiner's decision and denied that the so-called invisible shield implied complete protection against tooth decay.

"The Colgate-Palmolive Company has never claimed or intended to imply complete protection for any of its dentifrices," the firm said. It also argued that it should not be served with such an order since it eliminated voluntarily the invisible shield theme from its advertising after an FTC complaint last November.

Mr. Gross said in his report, "The evidence in this record does not support a finding that respondent will not, in the future, unless restrained by this commission, misrepresent the true properties and

cavity-inhibiting value, if any" of the dentifrice.

Dental Societies

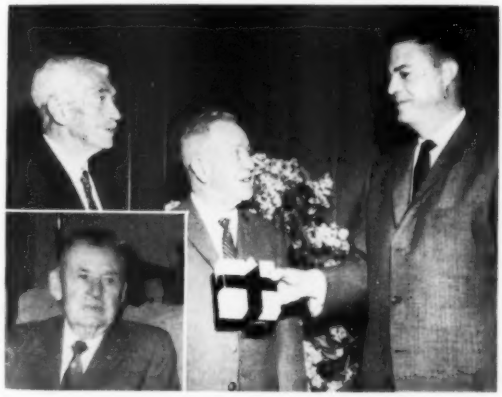
CONNECTICUT FORMS PROGRAM FOR DENTAL CARE OF AGING

A three-point program for the dental care of the chronically ill and aging has been developed by the Connecticut State Dental Association. The initial step in the fulfillment of the program is a two-day seminar to be held September 14 and 15 at the Yale-New Haven Medical Center, for 150 members of the Association and representatives of the five other New England dental societies, and dental directors of the New England State Public Health Department Services.

The program includes the following points: (1) professional information, comprised of postgraduate training for dentists stressing new technics in the dental health care of the chronically ill and aging, the dissemination of dental information to members of the medical profession through a joint medical-dental conference committee, and an article on dental health of the aging to appear in each issue of the Connecticut State Journal; (2) an educational program for the aged, which will include short talks by a dentist, with films, to be given in senior centers and "golden age" clubs throughout the state, and (3) a dental research program for the homebound chronically bedfast patients, to be directed by Franklin Erlenbach, chief of the Dental Division of the State Department of Public Health, in conjunction with the State Dental Association.

The postgraduate course will be directed by Sidney Silverman, head of prosthodontic postgraduate studies at New York University. An arrangement has been made with a television station in New Haven to televise the methods of providing bedside dental care. The demonstration will be carried to the seminar participants by closed circuit, and a color film will be made which will be available to the American Dental Association, Public Health agencies, or interested state dental societies which may plan similar programs.

It is expected that this program, including the film, will be presented at the White House Conference on Aging, January 9-12, 1961, and may serve as a pilot program for societies interested in developing comprehensive dental rehabilitation programs in their own communities for the aging population.



About 150 years of dental practice were represented by three members of the Yakima Valley (Wash.) Dental Society at a dinner given recently in their honor. Albert J. Low (left), University of Indiana 1902, has practiced in Roslyn for 52 years; William F. Clarke (center), University of Pennsylvania 1912, has been an orthodontist in Yakima for 48 years, and John F. Stout (inset) of Yakima was graduated from Creighton University in 1912. Suitably inscribed gifts were presented by Thomas R. Rosier of the committee on arrangements.

At the fifty-fourth annual session of the West Virginia State Dental Society held July 17-20 in Huntington, Paul H. Jeserich, president of the American Dental Association, and Mrs. Jeserich (left) were pictured with C. C. Cottrill, outgoing president of the state society, and Mrs. Cottrill. Dr. Jeserich spoke at the meeting.

Gerald L. St. Marie, New Haven, is the chairman of the committee on gerontology of the Connecticut State Dental Association. Michael J. Zazzaro is president of the association.

JUSTICE DOUGLAS TO ADDRESS FIRST DISTRICT AT BANQUET

The Hon. William O. Douglas, Associate Justice of the United States Supreme Court, will be the principal speaker at the Centennial Banquet of the First District Dental Society of New York, to be held November 11 at the Hotel Pierre, New York City, it has been announced by Theodore C. Agins and Max E. Michaelson, cochairman of the society's Centennial Committee.

Approximately a thousand members and guests of the society are expected to attend the function which will be preceded by a cocktail party to be given by the M. A. Gesner Company on behalf of a group of insurance company affiliates.

One of the projects of the Centennial Committee has been the development of an intensive public education program, under the chairmanship of Percy T. Phillips, past president of the American Dental Association. The program will stress the importance of good oral health to the individual's total well-being. Administered by public relations specialists through ethical dental channels, it will reach the public through all available media of communication. The dental trade is being invited to participate in the activity which will coordinate with as many existing health education groups as possible.

SUBMARINE BASE TOUR PART OF CONNECTICUT SEMINAR

A tour of the United States Naval Submarine Base at Groton, Conn., will be part of an all-day seminar sponsored by the Joint Dental-Pharmaceutical Committee of the Connecticut State Dental Association and the Connecticut Pharmaceutical Association. Members of both societies will attend the October 12 affair.

Dental and medical problems en-

countered in submarine operations and oral health problems in the Antarctic will be discussed, and a preview presented of similar problems to be faced in travel in outer space and in atomic powered submarines.

Speakers will be Commander George F. Bond, Medical Corps, USN, Officer in Charge, Medical Research Laboratory; Capt. Arne G. Nielsen, Dental Corps, USN, Medical Research Laboratory; Lt. Max Perlitsh, Dental Corps, USN, and Walter R. Miles, M.D., scientific director, Medical Research Laboratory.

Those in charge of arrangements, which will conclude with a cocktail party and dinner at the Officers' Club, are Lt.-Commander D. J. Deriso of the submarine base, Mr. Morris Hurwitz of the Connecticut Pharmaceutical Association and Albert J. Sasso of the Connecticut State Dental Association.

I. Lester Furnas

TESTIMONIAL DINNER FOR I. LESTER FURNAS

I. Lester Furnas of La Jolla, Calif., was honored by his county dental society June 8, in celebration of his 50 years in the practice of dentistry. A testimonial dinner was held at the La Jolla Country Club.

A graduate of the dental school of Indiana University, Dr. Furnas taught dental surgery there before joining the faculty of Western Reserve University. At Western Reserve he taught prosthetic dentistry and invented many instruments still in use today.

The United States government assigned Dr. Furnas to study dental problems among the Eskimos in Alaska. He is a commander in the dental corps of the U. S. Navy Reserve.

National Defense

NAVY'S E. G. F. POLLARD PROMOTED TO REAR ADMIRAL

Capt. E. G. F. Pollard, Navy Dental Corps, has been promoted to the temporary rank of Rear Admiral. Dr. Pollard, a graduate of the University of Minnesota School of Dentistry in 1936, succeeded Rear Admiral Curtiss W. Schantz as Commander of the Navy Dental School, National Naval Medical Center, Bethesda, Md. Admiral Pollard will assume permanent status when the next vacancy occurs in the ranks.

Born in Cleveland, Captain Pollard has served for over 24 years as an officer in the Navy Dental Corps. Among his many assignments ashore and afloat, he was stationed with the U. S. Embassy Guard, North China Marines, Peking, China, and served concurrently as honorary lecturer in dentistry and acting head of the dental service at Peiping Union Medical College. This association was abruptly terminated by the outbreak of World War II and the detention of the Embassy Guard by components of the Imperial Japanese Army.

Although he was a prisoner of war for the duration of World War II, he was able to continue to render dental treatment to fellow prisoners of war and was the anesthetist and assistant surgeon of the prisoners' medical team. For his service and accomplishments while a prisoner of war he was awarded the Legion of Merit and the Purple Heart.

He is a Fellow of the American College of Dentists, and a member of the Amer-

ican Academy of Oral Pathology as well as the American Dental Association.

E. G. F. Pollard

MAJ. GEN. JAMES EPPERLY, ARMY DENTAL CHIEF, RETIRES

Maj. Gen. James M. Epperly, DC, Assistant Surgeon General and Chief of the Army Dental Corps, retired from the Army July 31 after thirty-six and one-half years of active duty service.

General Epperly was graduated from the dental school of St. Louis University in 1923, and served his internship as an officer in the Army at Fitzsimons General Hospital, Denver. He attended the Army Dental School in Washington, D. C., and served in the Philippines for two years.

One of General Epperly's most important mid-career assignments was to establish and head a dental service at the newly-opened Camp Breckinridge, Ky., in 1942. He served in England, France and Germany during World War II and after the war went on temporary duty to Greece to study and make recommendations concerning the dental service of the Greek Army. He was promoted to the rank of Brigadier General that year and in 1954 was named Director of Dental Activities at Brooke Army Medical Center, Ft. Sam Houston, Texas. His most recent appointment came in 1956.

General Epperly is a member of the American Dental Association, the American College of Dentists and the Fédération Dentaire Internationale, and holds many military decorations including the Legion of Merit and Bronze Star Medal.

James M. Epperly

DATA REQUESTED ON STUDENT RESERVE OFFICER STATUS

As it has in the past, the Association's Council on Dental Education again has been requested by the Department of Defense and the Council on Federal Dental Services of the Association to assist in collecting information needed to implement the Armed Forces Reserve Dental Officer Commissioning Program. Deans of all dental schools are cooperating in the gathering of this information.

The military departments have an estimated requirement for dentists for fiscal year 1962 (July 1, 1961-June 30, 1962) for about 1,370 dental officer replacements. Although this estimate is subject to change, no significant change is anticipated. Since approximately 2,132 of the 1961 senior dental students have a liability for military service, the Armed

Forces will take about 64 per cent.

If a sufficient number of seniors volunteer, the surplus from previous graduating classes have the protection of not being drafted, and if the Department of Defense can obtain enough volunteers, the remaining three years of the draft law can pass without the Department's having to use its authority to meet the dental officer needs of the military. This would reflect favorably upon the dental profession.

Dental Education

TRADE GROUP SETS $100,000 AS DENTAL EDUCATION GOAL

Beginning in September the American Dental Trade Association will launch the first campaign conducted by the dental industry to aid dental education when it seeks to raise $100,000 for this purpose. The amount raised will be given to the Fund for Dental Education.

Interest in the Fund's program has been evident on the part of individual dental concerns during the first two years the Fund has been in operation, according to Maynard K. Hine, president. However, this marks the first time a full-scale campaign on a national basis to help dental education has ever been attempted by any organization in the dental field, he said.

The decision to ask the American Dental Trade Association to launch a campaign was made by the committee established by the association to maintain liaison with the Fund for Dental Education and report to the industry on progress of this newest effort to raise funds for dental education. Members of the liaison committee are: Mr. Ben B. White, Jr., president of the White-Rafert Company of Terre Haute, Ind., chairman; Mr. Frank A. Bryson, vice-president of the S. S. White Dental Manufacturing Company, and Mr. Leslie I. March, president of the L. D. Caulk Company. Mr. L. M. Anderson, Jr., president of L. M. Anderson Dental Manufacturing Com-

Lt. Cmdr. Thomas A. Garman (third from right) received the Commanding Officer's Award for Excellence in Operative Dentistry at the graduation exercises July 1 of the United States Naval Dental School, National Naval Medical Center, Washington, D. C. He and Capt. E. G. F. Pollard (second from left), Commanding Officer of the Dental School, are seen holding the plaque on which the names of the recipients are inscribed. Others in picture are Rear Admiral A. W. Chandler, DC, USN (Ret.), left; Rear Admiral C. V. Rault, DC, USN (Ret.), second from right, and C. W. Camalier, assistant secretary, Washington Office, American Dental Association.

pany of Florida, has been appointed national campaign chairman to head up the fund drive. Working with him are: Mr. Henry M. Thornton, president of Dentists' Supply Company of New York, York, Pa., and current president of the American Dental Trade Association, who will lead the Advanced Gifts Division; Mr. March, chairman of the Manufacturers' Division, and Mr. George A. Davidson, president of Davidson Dental Supply Company, New Orleans, chairman of the Dealers' Division.

Others who are working as regional chairmen of the campaign include: E. Ernest Rose, president of H. D. Justi & Son, Inc., Philadelphia; Mr. F. Hume Grimes, president of the Davis-Schultz Company, Inc., Buffalo; Mr. Ben B. White, Jr., president of the White-Rafert Company, Terre Haute; Mr. Frederick K. Clauser, president of the Midvale Dental Supply Company of St. Louis; Mr. Milton Goolsby, president of the Atlanta Dental Supply Company, Atlanta, Ga.; Mr. Edward L. Burrall, president of the Tri-State Dental Supply Company, Phoenix, Ariz.; Mr. Bert Chayes of the Chayes Dental Instrument Corporation, Danbury, Conn., and Mr. Al Leighton, Chicago representative of the L. D. Caulk Company.

The campaign will be concluded at the fall meeting of the ADTA which will begin November 10 at the Edgewater Beach Hotel, Chicago.

GRANT TO N.Y.U. FOR DENTAL TEACHER TRAINING PROGRAM

New York University's College of Dentistry will receive $119,596 over a five-year period from the W. K. Kellogg Foundation for the development and support of a dental teacher training program, it was announced by Dean Raymond J. Nagle.

The project will include "an extensive investigation by education authorities into the problems involved in the teaching of dentistry, the development from these investigations of a dental teacher training program, and the initiation of such a program as a regular part of graduate training at the College of Dentistry."

George J. Witkin, associate professor of periodontics and oral medicine, has been appointed director of the project in which the School of Education will cooperate.

POSTGRADUATE COURSES GIVEN FROM COAST TO COAST

Alabama • The University of Alabama School of Dentistry will offer two refresher courses during the month of November. They are: root canal therapy, November 5-7, Adeeb E. Thomas, and major oral surgery (limited to oral surgeons), November 12-14, Robert B. Shira. Details can be obtained from the director of the refresher course program at the school, 1919 Seventh Ave. S., Birmingham 3.

Boston • The Department of Stomatology, Division of Postgraduate Studies, School of Medicine, Boston University, and the Massachusetts Memorial Hospitals, announce the following special week-end refresher courses:

Pulp and periapical pathology, October 28 and 29, by Samuel Seltzer and Israel B. Bender; esthetics in restorative dentistry, November 4 and 5, by Charles Pincus, and removable partial dentures, November 11 and 12, by Louis Blatterfien.

Inquiries should be directed to David J. Baraban, director. The address is 750 Harrison Ave., Boston 18.

California • The University of California School of Dentistry, San Francisco, has scheduled a postgraduate course in accelerated efficiency utilizing washed-field principles for September 23 and 24, by Elbert O. Thompson. The course will include lectures, movies, demonstrations on a patient, and an analysis of time and motion principles. The fee of $50 will include attendance of the dentist and one of his assistants. No dental assistant will be permitted to attend unless accompanied by her employer-dentist. Applications can be sent to Ben W. Pavone, coordinator, Postgraduate Education, School of Dentistry, University of California, San Francisco Medical Center, San Francisco 22.

Loyola • Loyola University School of Dentistry, 1757 W. Harrison St., Chicago 12, is sponsoring a course in the fundamentals of

light wire differential forces in the treatment of malocclusions, a postgraduate course for orthodontists, by Joseph R. Jarabak. It will be given December 4-10 in Princeton, N. J., and January 29-February 4 at the Chicago school. Enrollment is limited and the tuition is $350. Dr. Jarabak will be assisted by Gilbert Carter, Walter Winter, Milton Braun and members of the Loyola orthodontic staff.

Michael Reese • The dental department of Michael Reese Hospital and Medical Center will introduce a new format in postgraduate courses for dentists when "The Management of Surgical Complications in Dental Practice" is presented under the direction of the oral surgery section October 24-26. Prevention and treatment of everyday complications will be covered in addition to those influenced by diseases of systemic origin. The fee is $150 and enrollment is limited. The address is 29th St. and Ellis Ave., Chicago 16.

Michigan • Fall courses being offered by the W. K. Kellogg Foundation Institute: Graduate and Postgraduate Dentistry, The University of Michigan, Ann Arbor, are:

Complete denture prosthesis, September 19-30; radiographic cephalometrics, October 3-5; occlusal equilibration, October 3-7; partial denture prosthesis, October 3-14; orthodontic treatment during the mixed dentition stage, October 24 and 25; hydrocolloid and rubber base inlay technics, October 24-26; crown and bridge prosthesis, October 24-November 4; higher speeds for rotating instruments, October 27 and 28; amalgam restorations, November 7-9; silicate restorations, November 10 and 11; precision attachment bridgework, November 14-18; dental treatment for handicapped children, November 17 and 18; endodontics, November 28-December 9; minor oral surgery, November 28-December 9; control of apprehension and pain in dentistry for children—a course for the family dentist, December 5 and 6; orthodontics for the general practitioner, December 5-16, and periodontics, December 5-16.

A brochure containing detailed information and a complete schedule for the entire year is available from the office of William R. Mann, associate director of the Institute.

Ohio • The 1960-61 postgraduate courses scheduled at the College of Dentistry of Ohio State University are: current concepts in operative dentistry, October 27-29, Donald W. Dickson and Harry H. Postle; general anesthesia, October 31-November 4 and May 15-19, Morgan L. Allison; complete denture prosthodontics, November 7-11 and April 3-7, Carl O. Boucher; oral surgery, November 28-December 2 and May 22-26, Morgan Allison; elastic impression materials and technics, December 7 and 8, Thomas F. McBride and Donald W. Dickson; crown and bridgework, January 23-27, Thomas F. McBride; refresher course in dental hygiene, January 30 and 31, Consuelo Wise and John R. Wilson; pedodontics and interceptive orthodontics, February 20-24, Lyle S. Pettit and Benjamin H. Williams; endodontics, March 6-10, J. Henry Kaiser; hypnosis in dentistry, April 10-12, Charles M. Pfersick; periodontics, April 13-15, John R. Wilson and William V. Walton; removable partial denture prosthodontics, April 24-28, Victor L. Steffel, and dental drugs in action, May 19 and 20, W. Russell Kampfer.

Further information can be had by writing to the postgraduate division of the school at 305 W. Twelfth Ave., Columbus 10.

Pennsylvania • Seven postgraduate courses that are being offered at the University of Pennsylvania School of Dentistry are: oral pathology, 20 evenings, once a week starting November 3, Lionel Gold and D. Walter Cohen; ultrasonics for the general practitioner, November 19, John H. Stine and associates; dentistry for handicapped children, December 12-14, Manuel M. Album and associates; seminar on problems of the handicapped, December 15, Manuel M. Album and associates; the use of ultrasonics in periodontics, December 17, Henry M. Goldman and D. Walter Cohen; hypnosis applied to dentistry, January 16-18, William T. Heron, and impacted teeth, January 25-27, Victor H. Frank and associates.

Further information can be obtained by writing to the school at 4001 Spruce St., Philadelphia 4.

Pittsburgh • Jointly sponsored by the University of Pittsburgh School of Dentistry and the Odontological Society of Western Pennsylvania are the following courses:

Complete denture construction, September 22-24, Victor H. Sears; radiological interpretation, October 5-7, J. Clifton Eselman; minor oral surgery, November 9-11, W. Harry Archer; orthodontics in periodontal therapy, January 18-20, Jack Alloy; medical-dental hypnosis, September 15-November 17, taught by seven physicians and three dentists.

Communications should be addressed to the Odontological Society of Western Pennsylvania, 206 Jenkins Arcade, Pittsburgh 22.

Temple • The graduate and postgraduate program for 1960-61 of the Temple University

School of Dentistry, Philadelphia, is as follows:

Clinical endodontics, October 31-November 5, Leonard Parris and associates; high speed in operative dentistry, December 7 and March 1, Carlos Weil and Charles A. Nagle, Jr.; implant dentures, January 9-13, Aaron Gershkoff and Norman I. Goldberg; anatomy—head and neck dissection, February 1 to May 17 (15 Wednesdays from 1 to 5 P.M.), Richard M. Snodgrasse; advanced fixed prosthesis, February 6-11, George Straussberg; present-day periodontal practice, February through April 18 (1 day a week for 10 weeks), Jacoby T. Rothner, Irving Glickman, Bernard Saturen and Neal W. Chilton; practice administration, February 18, Jay H. Eshleman; periodontal prosthesis, February 20-24, Morton Amsterdam and D. Walter Cohen and associates; electronic electrosurgery, March 3 and 4, Maurice J. Oringer; immediate surgical endodontics, March 6-11, Leonard Parris, Harold Rappaport and Robert Uchin; advanced surgical technics in periodontal therapy, March 25-29, Saul Schluger and Jack Alloy; complete denture prosthesis, May 8-12, Bernard Jankelson and associates.

Application forms and additional information can be obtained from Louis Herman, director of postgraduate studies at the school. The address is 3223 N. Broad St., Philadelphia 40.

Toronto • The Faculty of Dentistry, University of Toronto, is offering two short postgraduate courses: occlusion and occlusal correction, October 17-21, under the direction of C. H. M. Williams, and pedodontics, January 9 and 10, under the direction of S. A. McGregor. Enrollment in each class is limited to ten.

Further information can be obtained by writing to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 124 Edward St., Toronto 2, Ontario, Canada.

Washington • A two-day refresher course for dental hygienists will be conducted September 18 and 19 by David B. Law, Bernard Zeldow and Esther Wilkins at the University of Washington School of Dentistry. Other postgraduate courses offered this fall at the school are:

Periodontal prosthesis, October 4-6, Morton Amsterdam and D. Walter Cohen; professional economic aspects of dental practice, October 10 and 11, Ralph H. Campbell; communication in dental practice, November 2, Russell Haney, Ph.D.; clinical occlusion, November 14-18, Arne G. Lauritzen; crown and bridge planning and fabrication, December 2 and 3, John D. Guthrie and Kenneth N. Morrison.

Public Health

DONALD J. GALAGAN TO HEAD PUBLIC HEALTH SERVICE UNIT

Donald J. Galagan has been selected to head the new Division of Dental Public Health and Resources which is in the process of being formally established under the United States Public Health Service reorganization program. Dr. Galagan, who is expected to assume his new duties in September, is a consultant to the Association's Council on Dental Health.

NEW MEXICO DENTAL SOCIETY ACQUIRES MOBILE TRAILER

The New Mexico Dental Association has been furnished a mobile dental truck by the New Mexico Department of Health. William J. Hanratty, chairman of the association's Council on Dental Health, announces that K. J. White has agreed to use the trailer in remote areas throughout the state. Dental work is done on a private practice basis.

There are now 36 Albuquerque dentists who volunteer their services regularly to the Bernalillo County-Indian Hospital in Albuquerque. The program is in its seventh year and offers services to the indigent of Bernalillo County and to the Indians who live on reservations.

General

ROBERT M. KERR, PROMINENT MANUFACTURER, DIES AT 90

Mr. Robert Mc Nab Kerr, 90, chairman of the board of the Kerr Manufacturing Company of Detroit, died July 27 after a brief illness.

Born in Ontario, Canada, Mr. Kerr moved with his brothers to Detroit and founded the Detroit Dental Manufac-

turing Company in 1891 which produced a gas-fired furnace for making porcelain crowns. Today the company is one of the largest of its type in the world, with two plants in Detroit, one in Italy, and sales in every open market country in the world.

As president of the company for many years, Mr. Kerr contributed prominently in aid to dental research, working with individual dentists, universities and such groups as the Detroit Dental Clinic Club in experimentation in the field of dentistry. He was honored with a citation from the Michigan State Dental Association at its centennial anniversary in 1956 for his contribution to the profession.

Mr. Kerr's son, Robert, Jr., is president of the company.

DENTAL ASSISTANTS TO HEAR EDUCATORS AT ANNUAL PARLEY

Hamilton B. G. Robinson, dean, University of Kansas City dental school, and Saul Schluger, director, graduate education, University of Washington School of Dentistry, will be the principal speakers at the general meeting of the thirty-sixth annual session of the American Dental Assistants Association. The meeting will be held at 9 A.M. Monday, October 17, at the Roosevelt Hotel, Hollywood, Calif. Also speaking at this meeting will be Mrs. Joy Phillips, president of the association.

A panel discussion on what the dental assistant can do to assist the dentist in dental health instruction will be the feature of Tuesday's meeting, October 18. The panel will be moderated by Edwin W. Halvorson, Los Angeles, and the panelists will be Lyall O. Bishop, Walnut Creek, Calif.; Esther M. Wilkins, Seattle, and Mrs. Mary Rowley, CDA, La Mesa, Calif.

CLIFTON O. DUMMETT CHOSEN 1960 OUTSTANDING DENTIST

Clifton O. Dummett

Clifton O. Dummett, chief, Dental Service, Veterans Administration Hospital, Tuskegee, Ala., was named the outstanding dentist of 1960 by the National Dental Association at its annual convention August 1-5 in St. Louis.

Dr. Dummett was graduated from Northwestern University School of Dentistry in 1941, obtained his M.S.D. degree in periodontics from that same school, and as a Fellow of the Julius Rosenwald Fund, received his M.P.H. degree from the University of Michigan in 1947. He served as chief of periodontics, Base Preventive Dentistry Officer, Elmendorf Air Force Base, Anchorage, Alaska, and consultant in periodontics to the Alaskan Air Command.

Editor of the National Dental Association's quarterly publication since 1952, Dr. Dummett is the author of many articles on dentistry and a member of many societies, including the International Association for Dental Research, the American Association for the Advancement of Science and the American Dental Association.

HEART ASSOCIATION SESSION INCLUDES DENTAL PROGRAM

This year, for the first time, a program for dentists will be included in the American Heart Association's annual scientific sessions. Sponsored jointly with the American Dental Association, it will be held the opening day, Friday, October 21, in the Kiel Auditorium, St. Louis. Francis L. Chamberlain, M.D., clinical professor of medicine, University of California School of Medicine, San Francisco,

and a past president of the American Heart Association, and J. Paul Guidry of St. Louis are cochairmen.

Lester W. Burket, dean of the University of Pennsylvania dental school, served on the planning committee as the American Dental Association's representative.

The program will take the form of a symposium on management of medical-dental problems in patients with cardiovascular diseases. Among the speakers will be Roy W. Osterkamp, I. B. Bender, Robert S. Pressman, Bruno Kwapis and Stanley C. Harris, Ph.D.

Registration forms can be secured in advance by writing to: Mrs. Constance Livingston, membership department, The American Heart Association, 44 East 23rd St., New York 10.

IDENTIFICATION OF MENTAL PATIENT ASKED OF DENTISTS

Officials of Patton State Hospital, Patton, Calif., and the San Diego Police Department are seeking identification of a woman between 35 and 40 years of age known only as Jane Doe no. 29.

She was apprehended by the police in August 1959 while wandering in the Santa Fe railroad station, San Diego, and subsequently committed to Patton State Hospital as mentally ill. She has resisted all efforts to identify herself and is either unable or unwilling to speak. It is reported that she can write but refuses to do so. Interrogation even through use of drugs has proven fruitless, and fingerprint checks are negative.

California authorities are seeking identification of the woman shown above, known only as Jane Doe no. 29. It is believed she may have been employed as a dental technician. The accompanying article describes her dentition.

She is described as being five feet, five and three-quarters inches tall, with brown hair, blue eyes, and ruddy to fair complexion. She wears complete upper and partial lower dentures. Six natural anterior teeth are present in her lower jaw.

It is believed that Jane Doe no. 29 is married and has a grown daughter possibly in college. It is possible that she has been employed as a dental technician.

Anyone having information that could lead to the identity of this woman should communicate with O. L. Gericke, M.D., superintendent, Patton State Hospital, Drawer B., Patton, Calif.

Also • Sylvester B. Smith, Ambler, Pa., was unanimously elected president of the Montgomery-Bucks County Dental Society, the first Negro to serve in this post in the group's 30-year history. One of the largest components in Pennsylvania, the society has a membership of 400. . . . George C. Paffenbarger, director of the A.D.A. research division at the National Bureau of Standards, has been elected to the Board of Directors of the William J. Gies Foundation for the Advancement of Dentistry for the term expiring January 31, 1967. . . . Lt. Stanley M. Hellman, DC, USNR, is one of two dentists to be assigned to serve aboard the USS Hope for one year. A graduate of the College of Dentistry, University of Illinois, in 1958, Dr. Hellman was separated from the Navy in July. The USS Hope is scheduled to sail this month for Indonesia to carry medical and dental aid to southeastern Asia.

international dentistry

News from Brazil

Federal Minister of Education • Brazil's new Federal Minister of Education and Culture—corresponding to the United States Secretary of Health, Education, and Welfare—is a dentist. He is Colonel Paulo Pedro Penido, professor of pedodontics at the University of Minas Gerais School of Dentistry. Before taking over his new job, in early July of this year, Colonel Penido was Councillor to the Federal Minister of Education, twice dean of the University of Minas Gerais, president of the Brazilian Dental Federation (predecessor of the Brazilian Dental Association), and general director of the Social Services of the Industry.

Visitors from the United States • At this time of the year, when it is summer in the United States and winter in Brazil, several American dentists come to present courses and conferences for their Brazilian colleagues. This year is no exception. In addition to the course which is being taught by Sidney B. Finn, professor of pedodontics, University of Alabama School of Dentistry, to Brazilian members of the University staff, which was described in the last issue of THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION, the list of distinguished visitors includes: S. Sigmund Stahl, assistant professor at the New York University College of Dentistry, who presented a course in periodontics in July at the Dental Association of Rio de Janeiro and which will be repeated later in São Paulo; Cecil C. Steiner and George B. Boone, both from the Pacific Coast Society of Orthodontics, who will share their knowledge of orthodontics with Brazilian colleagues of Rio de Janeiro at the Dental Association, and Floyd A. Peyton, professor of dental materials at the University of Michigan, who presented a course at the University of Ceará in Fortaleza, and also will teach in Rio de Janeiro.

Schools of Dentistry • President Juscelino Kubitschek has authorized the activities of a new school, the Faculty of Dentistry of Piauí in the city of Teresina. A project of federalization of the whole University of the State of Paraíba, including the School of Dentistry, has been submitted to the President.

Hans Freudenthal, C.D.

News from Great Britain

The Register • In an editorial in the *British Dental Journal* of June 7 headed "The Register," the following paragraphs appeared:

"Those who are concerned with the future provision of dental treatment for the nation will find an examination of the Register for 1960 of considerable interest because at a time when there is a recognised shortage of dental surgeons the number it gives is 77 less than at the end of 1957.

"This decline, though it must be considered serious at a time when a larger Register is needed, cannot be properly assessed unless it is viewed in relation to the general trend in the size of the profession. The year 1921 was a milestone in the history of dentistry in this country and the Register at the end of that year contained 5,831 names, of which about 1,000 were entered by virtue of the Act of 1878. By the end of 1922 the number had risen to 12,762; made up of 6,723 registered under the Act of 1921, about 950 under the Act of 1878 and the remainder with College

and University qualifications or recognised foreign ones.

"During the next few years well over a thousand further names were added of those who took advantage of certain provisions of the 1921 Act, and by the beginning of 1926 over 56 per cent were registered by virtue of this Act and that of 1878.

"Before assessing the degree to which the dental schools have managed to maintain the Register one must take into consideration the number of practitioners with Commonwealth or foreign qualifications, and there are now nearly 900 of these (5.5 per cent) against 89 (1.5 per cent) in 1922. This leaves the present Register with a total of 13,265 having College or University qualifications obtained in this country, against 4,750 in 1921, just before unregistered practice was prohibited. The yearly rate of increase has varied and between the last two quinquennial investigations the average was 75 a year.

"The members of the McNair Committee, whose report was published in 1956, were of the opinion that a Register of at least 20,000 was necessary. Taking all of the facts into consideration it is obvious that at the current rate of increase the target of the McNair Committee is not likely to be reached this century. There is no doubt that the schools have done all that could be asked of them, and the directors and their teaching staffs have spared no effort to meet all the demands that their overcrowded schools have made. Also, when recruitment to the profession was at a low ebb the activities of the British Dental Association were largely responsible for improving it.

"The Government accepted the principles laid down by the McNair Committee and are responsible to the nation for the provision of dental treatment, but even their best friends could not congratulate them on the energy so far shown in improving the availability of the service or safeguarding the future provision of it. The demand for dental treatment in the National Health Service is becoming greater each year, and the 1960 Register underlines once more the paramount need for increased facilities for the training of dental surgeons."

A Matter of Conscience • Edward Samson, vice-chairman of the Dental Estimates Board of the General Dental Services in England and Wales, has written an article entitled "A Matter of Conscience," excerpts of which follow:

"An anonymous writer once said, 'Conscience is that still, small voice that tells you when someone is looking', and has been quoted by every impromptu wit ever since. Though this may be a somewhat too cynical assessment of that delicate instrument—even for these materialistic days—there is no doubt that conscience (morality) is surprisingly variable. Conscience is, in fact, one of the few amenities which has served man faithfully and, to his utmost advantage, obediently for as long as he has known right and enjoyed doing wrong. More than this, conscience has a chameleon-like quality, taking on the colour of its environment to suit the occasion. Observe, for example, how far less demanding are our morals when dealing with the State rather than individuals.

"Now dentists, members of a noble profession, instructed in the highest standards of integrity, probity and all the excellences, are burdened (or blessed) with two kinds of conscience—that which, aided by education, has been privately developed, the personal conscience, and that far more exigent one controlled by dentistry's ethics, the collective conscience. Thus doubly disciplined, dentists, it would be reasonable to assume, are persons of exceptional integrity, beyond suspicion, beyond reproach and only a little less than the angels. Yet, since the coming of the National Health Service a certain, shall we say, slackness has infected some of them. A few have sadly fallen from grace.

"A little discrepancy, here and there, in filling in an estimate form, an occasional omission of a detail, or an extra one put in, and over enthusiasm for radiography or dabbing on aconite and iodine more frequently than is usual—all these probably represent characteristics peculiar to a practice, or clerical errors committed by a careless staff. (How convenient an inconvenient staff can sometimes be!) Elsewhere there appear estimate forms on which claims for fillings are constantly far in excess of local estimate or national averages; what is officially termed 'excessive treatment'. Here again, the dentists concerned may be devoted disciples of Thaddeus P. Hyatt, conscientiously—perhaps fanatically—practicing his prophylactic odontotomy. Perhaps they have sharper probes than their colleagues, keener eyes or an overdeveloped fissure phobia. Possibly all their patients are totally ignorant of the teaching of oral hygiene, or maybe their clienteles consist entirely of children who spend ten shillings a week on sweets. There are doubtless reasons to explain why their particular patients always require three or four times as much conservative treatment as those of other dentists equally overworked, or why all the caries-prone people in the neighborhood choose only these dentists. Whatever the explanations—and without precise information we can but guess—the official administrators of the Service take a serious view of these eccentricities.

"It is, of course, comforting to realise that these cases are discovered because of their difference from the average, and for this very reason the average, the vast majority of the profession is behaving well and normally. For most dentists in the Service a comfortable income and an orderly, ethical conscience are not incompatible. But let us not jump to discreditable conclusions. Even those whose estimates are remarkable for their excessive treatment may be suffering from a conflict between those two kinds of conscience—the personal and the State conscience; a kind of moral schizophrenia.

"At this point it might be well to remark the summing up of a learned judge in the case of a dentist recently convicted of fraud. 'There was a curious, but very common attitude of mind', said Mr. Justice Hilbery, 'with regard to the swindling of Government funds. There seemed to be a loose notion that it was less dishonest and reprehensible if all that was done was to defraud the Government. But it must be recognised that dishonesty was dishonesty and criminal dishonesty was criminal dishonesty whether it was a Government body or a private citizen that was being defrauded'. Strong words, and especially appropriate to the particular case. Happily, few dentists need to be reminded of the principles they represent.

"Since no plan so far devised is perfect; since changing circumstances demand newer plans, regulations multiply like the seed of Abraham, and those dentists who imagine they can evade existing regulations are the cause of ever more restrictions being imposed upon themselves and their undeserving colleagues."

General Dental Council • In President Sir Wilfred Fish's address at the opening of the Eleventh Session in which he spoke about the state of the Register, discussed elsewhere in this letter, he also discussed the Royal Commission on Doctor's and Dentist's Remuneration. He expressed the hope that machinery based on the recommendations of the Commission will be constructed to ensure that adequate levels of remuneration are established and maintained on a basis which should encourage the highest standards of service to our patients.

On the subject of dental care of children he said there were two matters of concern: firstly, that some scheme should be worked out to provide better dental care for the children, and secondly that something should be done to stimulate increased recruitment of young graduates into the dental schools for teaching and for research into the prevention of dental disease.

He mentioned statutory examination, stating that arrangements have been made for examinations to be held regularly at six monthly intervals for those who have qualified overseas and apply for registration. One examination will be held in London in the spring of each year and another in Scotland in the autumn.

In speaking of dental hygienists he said that the training of dental hygienists, which, as is generally known, is being carried out for the time being by small groups in certain dental schools, is proceeding slowly.

His discussion of dental auxiliaries included the comments that preparations for the experimental training of dental auxiliaries continue to make satisfactory progress and it seems that by October this year it will be possible to report to the Privy Council that the arrangements have been officially "set in train." Also that J. V. Bingay has already been appointed director of the Training School and provided with a teaching staff; 60 young women have been selected to form the first class.

G. H. Leatherman,
D.M.D., F.D.S., R.C.S., F.A.C.D.

OBED MOEN RE-ELECTED F.D.I. HEAD AT DUBLIN MEETING

Obed H. Moen, Watertown, Wis., was unanimously re-elected president of the Fédération Dentaire Internationale at its forty-eighth annual session June 20-25 in Dublin, Ireland. Nearly 800 participants from 28 countries attended.

During the course of the convention, the National University of Ireland conferred honorary Doctor of Laws degrees upon Dr. Moen, H. Trendley Dean, former secretary of the Council on Dental Research of the American Dental Association, and Professor F. C. Wilkinson of the United Kingdom. Trinity College of Dublin awarded honorary Doctor of Science degrees to Birdsall Holly Broadbent, professor of dentofacial morphology and clinical professor of dental facial anatomy at Western Reserve University; Sir Wilfred Fish, president of the General Dental Council of the United Kingdom; Joseph Simeon Landa, former professor of prosthodontics and cleft palate rehabilitation at New York University College of Dentistry, and Andreas Lundström, professor of orthodontics in the Royal School of Dentistry, Stockholm, Sweden.

In other actions of the F.D.I. meeting, the General Assembly authorized the preparation of a history of the Fédération, to be written by D. F. L. Nord of the Netherlands. The following advisory committee has been constituted to assist the author: A. Joachim, F. H. Witt, Harold Hillenbrand, secretary of the

Two prominent members of the American Dental Association were awarded honorary Doctor of Laws degrees by the National University of Ireland during the recent annual meeting of the Fédération Dentaire Internationale. The degrees were conferred by Eamon de Valera (center, without cap), president of the Irish Free State and Chancellor of the University, on H. Trendley Dean (extreme left), former director of the National Institute of Dental Research, and secretary of the A.D.A. Council on Dental Research (retired), and Obed H. Moen (third from left), president of the F.D.I. and chairman of the A.D.A. Council on International Relations. Only Drs. Dean and Moen shown in the group receiving honorary degrees are from the United States.

American Dental Association, W. Stewart Ross and Gerald H. Leatherman.

Also, the General Assembly renewed for a further year the terms of office of the following members of the Special Commission on the Dentist's Health: Lester W. Burket (U.S.A.), president; J. Charon (France), secretary; R. Braun (Germany), I. Oldmark (Sweden) and W. Peebles (U.K.).

The Commission on Dental Research was directed to give priority to the production of a glossary of dental terms in English, French, German, Spanish, and, if possible, Italian, for use at the 1962 Congress in Cologne, Germany.

The following policy statement regarding relations between the dental profession and dental technicians was unanimously approved by the Assembly: "The dental technician renders valuable support to the dental profession by a strengthening of the bond between the qualified dentist and the dental technician."

On the subject of fluoridation, the Assembly adopted a resolution stating that the fluoridation of public water supplies should be commended to all public authorities as the most effective public health measure available for reducing safely and economically the incidence of dental caries, particularly in the younger age groups.

The next annual session of the Fédération will be held July 10-15, 1961, in Helsinki, Finland.

PARAGUAY SCHEDULES THIRD NATIONAL DENTAL MEETING

Artemio Salerno, president, and Hector Oxilia, secretary, announce that the Terceras Jornadas Odontologicas Nacionales will be held October 26-29 in Asuncion, Paraguay.

The scientific meeting is being organized by Circulo de Odontologos del Paraguay with the collaboration of the Sociedad Paraguaya de Cirugia Oral and the Sociedad Paraguaya de Odontopediatria y Ortodoncia.

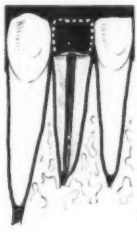
Members of the American Dental Association are invited to participate in the meeting. Information can be obtained by writing to either Dr. Salerno or Dr. Oxilia at Casilla de Correo 565, Asuncion.

cases and comments

Endodontic silver points in tooth reconstruction

J. B. Shaykin, D.D.S., Chicago

The technic herewith presented permits the use of silver points in endodontically treated teeth which require extensive coronal restoration. It may be employed in instances in which the crown is to be restored immediately or in anticipation of future coronal failure and replacement.



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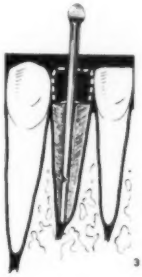

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1 Root and canal in which endodontic treatment has been completed. The canal is ready to receive a silver point obturation.

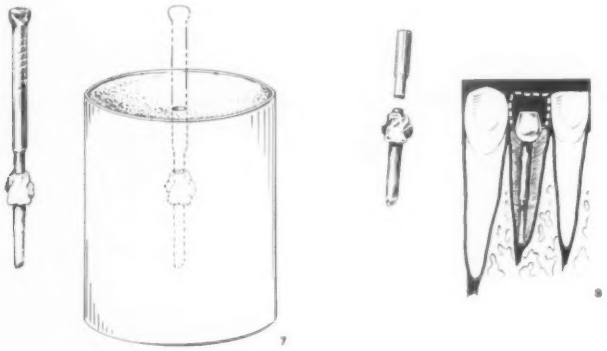
2 A silver point is prepared to be inserted into the root canal (Fig. 1). The point is notched two thirds of the way down the canal.

3 The silver point inserted into the canal is cemented at the lower third. Cement used is pulp canal sealer Kerro, or a mixture of zinc oxide-thymol iodide powder half-and-half and clove oil. The upper two thirds of the point is twisted off before the cement is set in order not to disturb the cement at the apical third.

4 If the crown of the tooth is not to be reconstructed at this time the upper two thirds of the root canal is sealed with gutta-percha. In the future, if reconstruction becomes necessary, gutta-percha can be reamed out without affecting the silver point at the apex of the tooth. If reconstruction of the coronal part of the tooth is an immediate necessity, a post and core are prepared as follows without placing gutta-percha in the upper part of root canal.

5 Left: Large reamers are used to enlarge the canal to the point of stop. The elimination of the bur helps to avoid perforations. Right: A threepenny finishing nail is trimmed sufficiently to enable it to fit snugly in the reamed canal and touch the silver point. Its accuracy is checked roentgenographically.

6 The nail is in position in the tooth showing wax-up of the core.



7 Left: Threepenny nail and wax core are ready for investment. The end of the nail will provide space for the cast post. The upper part of the nail will act as sprue former. Right: After the investment has set, the nail is withdrawn and the wax is dissipated by heat and the casting is made.

8 Left: The sprue is cut off, leaving the core and the post. Right: Core and post are cemented into position. The crown can then be constructed.

For those who prefer to use silver points, the preceding technic can also be applied to three-quarter crowns and to large MOD inlays where the cusps are covered with gold. This will give added support to what is left of the coronal portion of the tooth, thereby preventing labial or lingual wall breakage.

reports of councils and bureaus

Education and certification requirements for dental assistants

COUNCIL ON DENTAL EDUCATION

For the past several years, the Council on Dental Education has been studying a number of problems that relate to education and recognition of dental assistants. During that time the Council has worked closely with members of the American Dental Assistants Certification Board, members of the Education Committee of the American Dental Assistants Association, and with officers and members of the Board of Trustees of the American Dental Assistants Association. During these formal and informal meetings the Council has come to the conclusion that it would be of mutual benefit for both the dental profession and dental assistants to have programs of certification and to have formal educational standards.

The Council on Dental Education has developed a study of specific requirements and guide rules for the operation of a national certifying board for dental assistants. Details of these requirements have been discussed thoroughly by representatives of dental assisting agencies. The Council will now present "Requirements for the Approval of a Certification Board for Dental Assistants" to the House of Delegates of the American Dental Association at the October, 1960 meeting in Los Angeles.

The Council is cognizant of the fine accomplishments of the American Dental Assistants Certification Board in conducting its own certification program during the past 12 years. It has worked extensively with personnel of that board, so that there will be few, if any, changes needed in the Board's operation to comply with requirements to be submitted to the American Dental Association's House of Delegates for formal approval this year.

It is recognized that a certification program depends in large part on educational requirements and, furthermore, it is agreed that formal education is the most efficient manner for a student to gain knowledge and experience. Hence, it is highly desirable that requirements for a certifying board and requirements for education standards be developed simul-

taneously, if possible. The Council on Dental Education, its Committee on the Certification and Education of Dental Assistants, and representatives from other interested agencies, have given considerable attention to specific details that are needed for formal educational requirements which will complement requirements for certification of individual assistants. Educational requirements, therefore, have been studied with the view of utilizing programs already established by the American Dental Assistants Association's Educational Committee and also experimental work being conducted in a number of dental schools to train dental assistants.

The Council has developed educational requirements which, it feels, summarize the experience of many educators in this field and the aims and objectives of the certification program as well. Thus, the House of Delegates will consider "Requirements for the Approval of a Certification Board for Dental Assistants" and "Requirements for the Approval of Educational Programs for Dental Assistants" simultaneously at the Los Angeles session. While there are always details about any program or requirements that can be debated, the Council is presently satisfied that the proposed programs represent the best available judgment at this time of persons immediately concerned with education and certification problems for dental assistants.

Formal adoption by the American Dental Association's House of Delegates of requirements for a national certifying board for dental assistants will mean that the American Dental Assistants Association's present certification program will be continued and expanded and enhanced by the formal and official recognition of the dental profession. Adoption of requirements for the education of dental assistants will mean that dental assisting schools will be given official Council guidance in the development of programs having objectives and experience patterns similar to educational programs which have been conducted by the Education Committee of the American Dental Assistants Association. Adoption of educational standards will also mean that schools can expect to receive official visits by the Council on Dental Education, the dental profession's accrediting agency. Accreditation by the Council will mark an important step in the growth of the dental assistant movement and will provide clear-cut descriptions to dentists of the duties and functions of a dental assistant in the office and at the chair.

It is the Council on Dental Education's view that every effort should be made to develop standards for both education and certification programs for simultaneous presentation to the American Dental Association's House of Delegates, since the two sets of requirements complement each other. Also, it is the Council's view that dentists and dental assistants both have been anxious to have these requirements at the earliest possible time.

The Council emphasizes that no requirements are static or fixed for all time, but rather, all requirements developed by the Council on Dental Education are periodically revised with the help of consultants and advisers. Thus, the Council's requirements are modified from time to time to meet the changing needs and demands and to correct policies that may need revision. As in the past, the Council will work closely with agencies of the American Dental Assistants Association so that the proposed education and certification requirements will continue to meet needs of the profession and needs of practicing dental assistants, and so that its standards will continue to specify skills and the abilities needed by dental assistants to serve the practicing dentist efficiently and well.

The Council's "Requirements for the Approval of a Certification Board for Dental Assistants" and "Requirements for the Approval of Educational Programs for Dental Assistants" follow.

REQUIREMENTS FOR APPROVAL OF A CERTIFICATION BOARD FOR DENTAL ASSISTANTS

Introduction • One of the duties of the Council on Dental Education indicated in the *Bylaws* of the American Dental Association is "to accredit dental schools and schools in related fields of dental education . . . in accordance with requirements and standards approved by the House of Delegates." In discharging this responsibility, the Council has developed education standards and requirements for the approval of dental schools, dental hygiene schools and schools for the training of dental laboratory technicians. Similar requirements will be developed for programs designed to provide education for the dental assistant, that is, "Requirements for the Training of Dental Assistants." Educational requirements are submitted to the American Dental Association's House of Delegates for approval after which these standards are used as a basis for accrediting these educational programs.

It is the opinion of the Council on Dental Education that a mechanism should be made available for providing evidence that a dental assistant has acquired the knowledge and ability that is expected of her as a dental assistant, that is, a program of certification. The Association has already indicated its approval of certification programs and in the instance of the dental laboratory technician, the House of Delegates has approved a basic set of requirements within which structure the certification program may be conducted. A program of certification that is approved as meeting these basic requirements is therefore one that has earned the approval of the dental profession even though the program itself is not conducted or operated by the American Dental Association.

In October, 1956 the House of Delegates requested the Council on Dental Education to "study the desirability of developing 'Requirements for the Approval of Certification Boards for Dental Auxiliaries' under which an acceptance program for the certification of dental laboratory technicians and dental assistants might become possible" (*Trans.* 1956:187).

The following basic requirements are prescribed by the Council on Dental Education for the evaluation of an agency which seeks approval of the American Dental Association for a program to certify dental assistants on the basis of educational standards approved by the dental profession. The Association has approved educational standards for dental laboratory technicians (*Trans.* 1957:360) and has approved "Requirements for the Approval of a Certification Board for Dental Laboratory Technicians" (*Trans.* 1957:361).

Organization of Board • 1. It is suggested that this Board be named the "Certifying Board of the American Dental Assistants Association." (*Note:* Reference hereafter to "The Board" shall refer specifically to the Certifying Board of the American Dental Assistants Association.)

2. The Board shall have no less than five, nor more than nine, voting members designated on a rotation basis in accordance with a method approved by the Council on Dental Education. Members of a founder board (or a board which exists at the time that application is made to meet the requirements of this document) shall be granted certificates although they shall be exempt from the certifying examination. All subsequent members of the Board shall be certified.

   a. Since a board known as the "American Dental Assistants Certification Board" is currently conducting a certification program, it is assumed that *that* Board will constitute the founder Board whose program would be conducted under requirements stated in this document.

3. The Board shall submit in writing to the Council on Dental Education a description of the plan for the nomination and election of Board members, terms of office, and restrictions (if any) on reelection.

4. The Board shall submit in writing to the Council on Dental Education a description of a program which is sufficiently comprehensive in scope to meet the objectives of a certification board for dental assistants and which would meet the requirements of the American Dental Association.

5. The Board shall submit in writing to the Council on Dental Education evidence that it either has or shall have adequate financial support to conduct its program of certification.

6. The Board may select suitable consultants or agencies to assist in its operations, such as the preparation and administration of examinations and the evaluation of records and examinations of candidates. The criteria for the selection of such consultants or agencies shall be subject to the review and approval of the Council on Dental Education.

7. The Board, when submitting its application for approval of the certification program must show evidence that the objectives of the program have been approved by the nationally recognized association of dental assistants, that is, the American Dental Assistants Association, or by the appropriate governing body of that Association; and must show evidence that this same governing body assumes a responsibility for the continuing conduct of the Board's

operation and periodically reviews the Board's program.

Operation of Board • 1. The objective of the Board shall be the issuance of certificates to dental assistants who have demonstrated special competence and who have had adequate experience as dental assistants.

2. The Board shall outline a program sufficiently comprehensive to meet all requirements established by the American Dental Association for the administration and operation of a national certifying board for dental assistants.

3. The Board shall submit in writing to the Council on Dental Education a plan for renewal of certificates now held by persons certified under requirements established by the American Dental Assistants Certification Board, that is, the present certifying agency of the American Dental Assistants Association. The Board shall establish standards and requirements for these previously certified persons. Such standards and criteria shall be similar to those established for persons to be certified and annually recertified by the Certifying Board of the American Dental Assistants Association. The Board need not require persons certified under the former program to meet all standards and take all examinations now defined for persons making application for certification for the first time.

4. The Board shall report annually to the Council on Dental Education all details of its operations, including reports on finances, admissions, procedures for review of applicants, and examination procedures.

5. The Board shall publicize its requirements for candidates.

6. The Board shall conduct at least one examination each calendar year which shall be publicized at least six months prior to the examination, except by waiver permitted by the Council on Dental Education.

7. The Board shall maintain listings of educational courses and programs approved by the Council on Dental Education which are acceptable for fulfilling the educational needs of the candidates for certification.

a. The Board shall maintain listings to advise certifees and prospective certifees of available continuing education programs.

8. The Board shall maintain a current list of all persons certified.

9. Periodically the Board shall provide the Council on Dental Education with a report to indicate that there is a sufficient number of effective continuing education programs for dental assistants and that the demand exists for such programs.

10. Periodically the Board shall gather information relating to persons currently certified, so that these data can be used in studies of dental assisting and as a basis for annual certificate renewal.

11. The Board shall provide the Council with a description of criteria and standards required for the annual certificate renewal.

12. The Board shall have full authority to conduct the certification program; that is, the Board shall be responsible for evaluating qualifications and competencies of persons certified and for maintaining adequate standards for annual renewal of certificates.

13. The Board shall maintain close liaison with the Council and its parent agency, the American Dental Association. The Board shall report on its program periodically to its parent agency, the American Dental Assistants Association, and keep that agency informed as to the manner in which its certification program meets the requirements of the American Dental Association's Council on Dental Education.

Granting Certificates • 1. In the evaluation of its candidates for certification, the Board shall use standards of education and experience approved by the Council on Dental Education. The following requirements may be used as a basis for the minimal standards:

a. Satisfactory moral and ethical standing as a member of the dental health team.

b. Citizenship in the United States or Canada or evidence of having filed a Declaration of Intention.

c. Graduation from high school or an equivalent acceptable to the Board.

d. A period of study and training in an institution whose program has been approved by the Council on Dental Education or completion of a program for the dental hygienist that has been approved by the Council on Dental Education.

d-1. Until the Council on Dental Education has established educational requirements and standards for dental assisting schools, educational standards shall be established by the Board.

e. A period of at least two years of on-the-job experience as a dental assistant, in addition to the period of educational experience.

f. Satisfactory performance on an examination prescribed by the Board.

f-1. Examinations may be given directly following the completion of the education requirement; that is, upon receipt of a completion certificate from an approved school. A certificate shall not be granted, however, until a specified period of experience has also been completed. The period of experience shall be determined by the Board, but in no instance shall it be less than the mini-

mum period indicated in Section e above.

2. The Board shall issue certificates annually to those who qualify for certification.

a. Renewal of certificates granted by the American Dental Assistants Certification Board (the present certifying agency of the American Dental Assistants Association) to persons now holding such certificates may be accomplished without examination and by a waiver agreement.

b. All persons qualifying for certificates following approval of these requirements shall satisfy certificate renewal requirements as determined by the Board.

c. The Board shall require an annual certificate renewal fee to enable it to carry on its program.

3. A person certified by the Board shall be known as a "Certified Dental Assistant."

Waivers • It is a basic view of the Council that, with the exception of the charter members of the Certification Board, all persons seeking certification shall qualify for certification by completing satisfactorily a minimum period of training and experience and by passing an examination. However, the Council realizes that during organization stages of this certification program for dental assistants (or for the period of time during which an existing board is being reorganized or modified to meet the Council's requirements) there will be need for a provision to recognize persons who have had outstanding service as dental assistants. Therefore, it will approve a special provision in the rules of the Board to waive educational requirements for persons having five or more years of service and experience in dental assisting, provided that an acceptable provision is made to determine the qualification of such persons as ethical members of the dental health team.

1. The Board shall make formal requests to the Council on Dental Education regarding specific types of waivers which it believes essential for the initial period of certification and certificate renewal. Such requests shall be substantiated, explained and justified and only waivers approved by the Council on Dental Education may be used.

2. If waivers are necessary and approved by the Council on Dental Education, the Board shall report periodically to the Council the names of those individuals certified through waiver.

REQUIREMENTS FOR THE APPROVAL OF EDUCATIONAL PROGRAMS FOR DENTAL ASSISTANTS

Purpose of Requirements • The purpose of these *Requirements* is to provide an outline of a program which will be effective in providing education needed by a dental assistant. The character and quantity of the educational program are planned with the realization that the duties of a dental assistant are adjunctive to the dental profession. The function and the responsibilities of the dental assistants are defined in these *Requirements*.

These educational standards have been developed by the Council on Dental Education of the American Dental Association for use as a guide by schools planning courses of instruction. These standards may also be used by the profession in reviewing specific functions and duties which may be performed by a dental assistant. In creating these standards, the Council, through conferences with the American Dental Assistants Association, reached the conclusion that educational requirements should provide criteria for evaluating educational programs. These programs will provide education and experience needed by a dental assistant employed by a dentist in any area of dental practice.

Authorization of Responsibility • The *Bylaws* of the American Dental Association (Chapter IX, Section 110B) state: "The duties of the Council [on Dental Education] shall be: (a) To act as the agency of the Association in the investigation of dental education and associated subjects; (b) To accredit on behalf of this Association dental schools and schools in related fields of dental education in accordance with requirements and standards approved by the House of Delegates; (c) To approve on behalf of this Association internships and residencies in accordance with requirements and standards approved by the House of Delegates; (d) To study and make recommendations on (1) the recognition of special areas of dental practice; (2) the approval or disapproval of national certifying boards for special areas of dental practice; (3) the educational and administrative standards of the certifying boards; and to act on behalf of this Association in maintaining effective liaison with the certifying boards and related special groups.

The Council on Dental Education has been concerned with the establishment of educa-

tional standards for the education of dental assistants, and it is important that these standards continue to be the responsibility of the dental profession. It is also important that the institutions which educate dental assistants come under the purview of the Association's accrediting agency; namely, the Council on Dental Education.

Educational Program • It is intended that the program provide the student-dental assistant with educational experiences to make her competent in all phases of office management, office laboratory procedures and chairside dental assisting.

Programs will be accredited if they meet the requirements of the Council on Dental Education which have been established by the American Dental Association.

THE FORMAL PROGRAM

Length of Program • The program must be at least one academic year in length, that is, approximately nine months.

Institution • The program of basic instruction may be placed under the organization and administration of a dental school, may be operated by a dental school as a separate division under separate administration, or may be conducted as an integral part of a separate educational agency. In all instances, the program must be operated on a nonprofit basis.

Physical Facilities • The physical plant and facilities will be evaluated on the basis of adequacy to provide space, equipment and environment for effective administration of the program and effective conduct of courses which are a part of the program. It is expected that institutions will provide adequate space for offices and for research of faculty members.

Admission of Students • Students admitted to the program must have a high school diploma or equivalent education.

Promotion and Graduation • Students satisfactorily completing the one-year program may be given a document granted by the sponsoring institution. This document should stipulate dates of attendance.

It is emphasized that granting the completion document does not signify "certification," that is, that the graduate is a "Certified Dental Assistant," a title of accomplishment conferred by the Certification Board of the American Dental Assistants Association operating under the *Requirements* approved by the American Dental Association.

Library • It is expected that students enrolled in the program will have a library available for their use containing textbooks, reference materials and other instructional aids. Library facilities should also include materials useful to the teaching staff and to persons engaged in educational research.

Financial Support • Financial management and support will be evaluated on the basis that each program meets acceptable educational objectives. Adequacy of the operating budgets will be demonstrated by the character and quality of physical facilities, equipment, faculty, library, teaching methods and curriculum. Only with adequate financial support and properly allocated expenditures will educational programs meet educational standards included in these *Requirements*.

It is again emphasized that institutions and programs must not be operated on a proprietary basis. While it is feasible, through high tuition fees and other remunerative projects, to develop self-supporting or profit-making programs, these *Requirements* stipulate that a program must be conducted only for the benefit of the students and must meet the aims and objectives of the profession.

Financial support of the programs will also be evaluated to determine if parent institutions and administrators have planned establishment and operation of programs to guarantee continuance of operations for a reasonable period of time.

Curriculum • The course of study should be one academic year in length, that is, about nine months. These *Requirements* do not specify number of clock hours or number of credits for each course. It is expected that institutions will plan a curriculum which will be balanced to meet the aims and objectives of the program. Also, these *Requirements* do not specify names of the courses, but stipulate only areas of instruction which must be included in the curriculum.

Areas of Instruction • The following areas of instruction, concepts or topics must be included in the curriculum:

A. *Preclinical Sciences* • (Orientation and background information). Knowledge of:

1. History, organization, and code of ethics of American Dental Association and American Dental Assistants Association.

2. Certification and state practice acts as applied to assistant.
3. Sterilization and its application to materials and instruments.
4. Medication, including anesthetics, and legal implications as applied to dentistry.
5. Tooth form, function, and relationships.
6. Diet and nutrition; its application to dental health and disease.
7. Principal causes of oral inflammation, degeneration and dental caries.
8. Application of first aid procedures.
9. Principles of transmittal of common diseases.
10. Basic principles of English composition and speech, and the ability to type business letters.

B. *Clinical Sciences:* (Office chairside and laboratory procedures).
1. Knowledge and ability to assist the dentist in any routine operative or office procedure.
2. Knowledge and ability to identify and prepare materials, instruments, and equipment for any routine dental procedures.
3. Knowledge and ability to use the x-ray machine, take x-rays, develop and mount films.
4. Knowledge and ability to manage office routines related to patient appointments, records, payment of fees and bookkeeping.
5. Knowledge of supplies, their uses, purchase and storage.
6. Knowledge and ability to care for equipment and instruments.
7. Knowledge of personal hygiene and grooming.
8. Knowledge and ability in use and application of gypsum products and the preparation and trimming of casts or dies.
9. Knowledge and ability to invest, cast, and polish an inlay or crown casting.
10. Ability to adapt baseplates and wax rims on casts.
11. Knowledge of golds, alloys, and waxes and their application.
12. Knowledge of commercial laboratories and preparation of cases to be sent for laboratory processing.

C. *Instruction* • Adequacy of instruction will be measured, in part, by availability of teaching aids, use of lecture-demonstration methods, individual laboratory methods, student-to-teacher ratios and upon the instructors' ability to inspire students to attain knowledge and high ethical principles within the objectives of the program.

Instruction will also be evaluated upon general impressions and concepts given students by the faculty regarding dental health and the role of members of the dental health team in meeting the aims of the profession. Special attention will be given to the effectiveness of courses in ethics, jurisprudence and professional relations and also to the students' impression of the faculty.

The dental assistant program will not be considered a degree program and, in most instances, will be offered at a vocational level. However, it is expected that dental schools which sponsor dental assistant programs will offer them at a level consistent with university policy.

D. *Use of Additional Educational Facilities* • It is necessary that students in dental assisting programs be familiar with dental offices, office procedures, and office laboratory procedures. It is also expected that dental assistant programs will provide instruction in commercial laboratory procedures and will have equipment comparable to that found in modern commercial dental laboratories. It is desirable that students be given instruction and experience in a dental office or dental clinic.

General Policy on Accreditation • It is the policy of the Council on Dental Education to accredit programs for training dental assistants, providing that administrators responsible for the program indicate a desire for evaluation. Institutions requesting evaluation must provide the Council with periodic reports and data pertinent to formal evaluation of the educational program. The Council will then send visiting committees to the institution as necessary and desirable. The Council will provide a list of accredited programs and will indicate that each is "fully approved" or "provisionally approved." Programs which do not meet these *Requirements* will not be listed by the Council.

Programs will not be evaluated for accreditation until they are in operation; that is, no program existing as a "plan" or a "proposal" will be eligible for accreditation. The Council will assist administrators in planning new programs and, with this knowledge, the Council will be able also to provide administrators with informal indication regarding possible future accreditation of the program.

Reaching special "publics" in a public relations program

BUREAU OF PUBLIC INFORMATION

The public relations program of a dental society cannot be completely successful if it simply aims at the public in general. There are many "publics"—business men, teachers, unions, members of allied health professions, government leaders, and so on—and the public relations program must be tailored specifically to reach each group. One method is to use the thousands of specialized publications which are read by such groups. An example is the newspaper or magazine published by a national or local union.

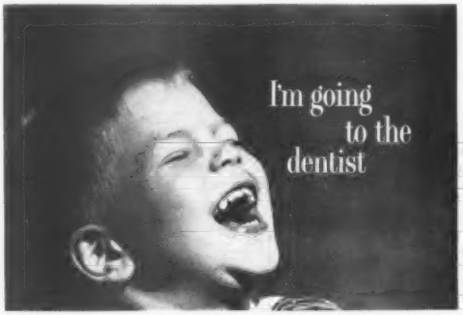
Early in 1960, the Bureau was asked to provide information for an article on fluoridation for the *RWDSU Record* published by the Retail, Wholesale and Department Store Union, AFL-CIO. An 800-word statement by Paul H. Jeserich, Association president, was prepared and submitted to the publication together with a picture and brief biography of Dr. Jeserich and the photograph of a smiling child which is reproduced here. The *Record* published the material as a full-page feature under the headline: "America's No. 1 Dentist Tells: Why I Favor Fluoridation." A special notice on page one of the issue called attention to the feature which appeared inside the paper. The same issue carried a detailed statement on the Association's criticism of dentifrice advertising.

The feature was circulated to the union's 160,000 members and, because of the specialized nature of the publication, undoubtedly carried more weight with the readers than would the same article in a publication designed for the general public.

State and local dental societies which do not already do so, are urged to investigate specialized publications of all types which are issued in their area and supply material to them whenever possible.

News releases and announcements issued to the daily and weekly press should be sent routinely to such specialized publications. But even more effective will be the material which is designed specifically to appeal to the particular readership, the special "public" which the publication serves. To obtain information on such publications in an area, the following directories, many of which may be found in public libraries, can be consulted: *Directory of House Organs*, Printers' Ink Publishing Co., New York; *Directory of Newspapers and Periodicals*, N. W. Ayer & Son, Inc., Philadelphia; *Editorial Directory* (Farm, Business and Consumer Editions), Galub Publishing Co., New York; *Nation's Leading House Magazines*, Gebbie Press, New York.

The fluoridation smile



The 1959 survey of dental practice
V. Advanced dental education; hospital appointments

BUREAU OF ECONOMIC RESEARCH AND STATISTICS

Nine types of courses and programs in advanced dental education were listed on the questionnaire, and respondents were asked to check the types they had taken since graduation from dental school (Table 30). Eighty-one per cent of nonsalaried respondents indicated they had received some type of advanced dental education. "Short courses of a few days or few weeks at a dental school" and "courses sponsored by a dental society" were both checked by about 45 per cent. One third checked "study club courses" and a similar number "short courses sponsored by a commercial firm." One fourth had taken postgraduate programs.

One out of nine dentists reported having taken an internship program in a hospital. This figure appears high and it is possible that it includes some dentists receiving training under a preceptorship type of program or other hospital experience.

The fact that advanced dental education has been considered more essential in recent years than it was a few decades ago is reflected in the age differences shown in Table 30. For each type of advanced dental education, the highest percentage was for dentists in their 40's or their 50's. Undoubtedly dentists now under 40 will exceed these figures within the next 10 or 15 years.

For five types of advanced dental education, dentists were asked to indicate the number of courses taken since graduation. Table 31 shows the mean number of courses taken by those dentists who had taken such courses. It is apparent that those dentists who take postgraduate or short courses take such courses repeatedly. Dentists 70 years of age and older who had taken study club courses averaged 40.2 such courses per dentist. For "courses sponsored by a dental society" the average in this age group was 34.9 courses and for "short courses sponsored by a commercial firm" the average was 28.0 courses.

Dentists were asked whether they had taken any of the nine listed types of courses during 1958, and, if so, the number of classroom hours (including laboratory hours). Nearly half (45.4 per cent) of all nonsalaried dentists reported taking some type of advanced dental education during the year (Table 32). The percentage was nearly constant for ages from 30 to 60. The figure was somewhat lower for dentists recently graduated and dentists nearing retirement age. Regionally,

Table 30 • Percentage of nonsalaried dentists who had taken the following types of courses or programs in advanced dental education since graduation from dental school, by age

Courses or programs	–29	30–39	40–49	50–59	60–69	70–	All ages
Short courses of a few days or few weeks at a dental school	17.2	41.7	52.7	50.5	46.1	22.1	45.1
Graduate study which could lead to a degree	.9	3.3	4.8	1.4	2.8	2.9	3.2
Graduate study which did lead to an advanced degree	.9	4.8	4.7	4.9	2.5	1.5	4.3
Postgraduate program which did not lead to a degree	5.2	18.6	31.0	33.2	26.2	32.4	25.2
Internship program in hospital	3.5	11.0	16.7	11.1	5.3	2.9	11.5
Residency program in hospital	.0	3.4	6.1	3.5	3.2	.0	3.9
Courses sponsored by a dental society	19.0	39.0	46.6	58.7	50.0	38.2	45.0
Study club courses	16.4	30.9	30.9	39.6	37.6	23.5	32.4
Short courses sponsored by a commercial firm	12.9	29.3	31.5	43.8	39.4	20.6	32.6

Table 31 • Mean number of specified types of courses or programs in advanced dental education taken by dentists who had taken such courses, by age

Courses or programs	–29	30–39	40–49	50–59	60–69	70–	All ages
Short courses of a few days or few weeks at a dental school	1.9	4.3	5.7	7.2	8.5	*	5.9
Postgraduate program which did not lead to a degree	1.0	3.8	4.5	6.3	7.5	12.4	5.3
Courses sponsored by a dental society	3.1	8.6	10.6	18.2	22.8	34.9	13.6
Study club courses	1.9	9.2	11.6	14.1	22.3	40.2	12.9
Short courses sponsored by a commercial firm	1.9	5.4	6.6	11.5	13.7	28.0	8.5

*Too few replies for reliable statistics.

Table 32 • Percentage of nonsalaried dentists who took courses or programs in advanced dental education during 1958, by age

Age	Per cent
–29	32.8
30–39	49.7
40–49	48.5
50–59	46.6
60–69	31.2
70–	11.8
All ages	45.4

Table 33 • Percentage of nonsalaried dentists who took courses or programs in advanced dental education during 1958, by region

Region	Per cent
New England	48.1
Middle East	46.0
Southeast	43.6
Southwest	44.2
Central	42.2
Northwest	48.8
Far West	50.6
United States	45.4

Table 34 • Percentage of nonsalaried dentists who took courses or programs in advanced dental education during 1958, by type of practice

Type of practice	Per cent
General practitioner	45.0
Specialist	50.6
Oral surgeon	40.3
Orthodontist	48.7
Pedodontist	75.8
Periodontist	50.0
Other specialists	53.3
All types of practice	45.4

Table 35 • Percentage distribution of nonsalaried dentists who took courses or programs in advanced dental education in 1958 according to number of classroom (including laboratory) hours

No. of hours	Per cent
1–4	6.5
5–7	13.4
10–14	16.1
15–19	11.2
20–24	13.7
25–29	3.7
30–34	7.3
35–39	3.1
40–44	5.8
45–49	3.0
50–59	3.8
60–69	3.5
70–79	2.2
80–89	1.1
90–99	.8
100–149	3.0
150–	1.8
Total	100.0

Table 36 • Average number of classroom hours spent by nonsalaried dentists who took courses or programs in advanced dental education during 1958, by age

Age	Mean	Median
–29	30.9	24.5
30–39	35.4	20.0
40–49	35.3	20.0
50–59	24.4	16.0
60–69	21.2	18.0
70–	*	*
All ages	32.2	20.0

*Too few replies for reliable statistics.

Table 37 • Average number of classroom hours spent by nonsalaried dentists who took courses or programs in advanced dental education during 1958, by type of practice

Type of practice	Mean	Median
General practitioner	29.2	20.0
Specialist	58.8	30.0
Oral surgeon	62.7	25.5
Orthodontist	54.5	30.0
Pedodontist	37.0	26.0
Other specialists	86.3	40.0
All types of practice	32.2	20.0

Table 38 • Percentage of nonsalaried dentists holding hospital staff appointments, by age

Age	Per cent
–29	26.3
30–39	36.0
40–49	37.4
50–59	26.8
60–69	26.9
70–	11.9
All ages	32.9

Table 39 • Percentage of nonsalaried dentists holding hospital staff appointments, by region

Region	Per cent
New England	49.0
Middle East	31.7
Southeast	44.9
Southwest	38.4
Central	25.5
Northwest	36.1
Far West	27.2
United States	32.9

Table 40 • Percentage of nonsalaried dentists holding hospital staff appointments, by type of practice

Type of practice	Per cent
General practitioner	31.1
Specialist	50.9
Oral surgeon	98.5
Orthodontist	26.3
Pedodontist	54.5
Periodontist	42.3
Other specialists	42.9
All types of practice	32.9

the percentage of dentists taking advanced courses during 1958 was highest in the Far West (50.6 per cent) and lowest in the Central region (42.2 per cent) (Table 33). More of the specialists than of the general practitioners had taken courses in 1958 (Table 34). Three fourths of the pedodontists had taken courses, compared to only 40.3 per cent of the oral surgeons.

The distribution of those dentists taking advanced dental education in 1958 according to number of classroom hours is shown in Table 35. The modal (most common) class interval was 10 to 14 hours. However, because some dentists were in full-time attendance at school for most or all of the year, the mean class interval was 32.2 hours and the median 20.0 hours.

Age differences in number of classroom hours of advanced dental education are shown in Table 36. Specialists who took advanced dental education in 1958 averaged twice as many classroom hours as general practitioners (Table 37). Although the percentage of oral surgeons taking courses was relatively low and the percentage of pedodontists high, the length of the courses taken by oral surgeons was considerably greater than the comparable figure for pedodontists. Mean number of classroom hours varied regionally from 27.3 in New England to 40.6 in the Far West.

To the question "do you have an appointment to a hospital dental staff?" 32.9 per cent of self-employed dentists answered "yes." For dentists under 30, the figure was 26.3 per cent (Table 38). The peak of 37.4 per cent was reached by dentists in their 40's. Only 11.9 per cent of dentists 70 and older reported having hospital staff appointments.

Regional variation in percentage of dentists with hospital appointments was from 25.5 per cent in the Central region to 49.0 per cent in New England (Table 39).

Half of the specialists reported having hospital appointments, compared to slightly under one third of the general practitioners (Table 40). The highest percentage was for oral surgeons (98.5 per cent) and lowest was for orthodontists (26.3 per cent).

The next article in this series will present information on use of high-speed equipment and the writing of prescriptions.

List of certified dental materials revised to June 1, 1960

COUNCIL ON DENTAL RESEARCH

Because there has been some confusion regarding certified dental materials, the Council on Dental Research presents this summary to clarify the operation of its certification plan.

The first fundamental item in this plan is the existence of official American Dental Association specifications for dental materials. These specifications are the outcome of research by the American Dental Association Research Division at the National Bureau of Standards correlated with the clinical experience of members of the Association.

As the second step in the operation of the plan, the manufacturers are invited to certify to the Council on Dental Research that their products comply with the specifications. It would be manifestly impossible for the Council (through the American Dental Association Research Division at the National Bureau of Standards) to test every lot of every certified material. For this reason, the Council has required that the manufacturer, on certifying a product, not only must guarantee that this product meets specification requirements but also must furnish evidence that he maintains a testing program adequate to insure continual compliance of the product.

On receipt of a certification for a new product with all required data, the Council procures a random sample through regular trade channels, usually by asking a dentist to act as its agent. This sample is tested for compliance with all specification requirements. Only when the certification is complete and in proper form and the sample has passed all specification tests does the Council accept the manufacturer's certification. The name of the product is then added to the list of certified dental materials.

This, however, is not the complete story. The continuation of any product on the list of certified dental materials is contingent on its maintenance at specification quality. Surveys of all products on the list are made at the Council's direction. These surveys are made on samples procured on the open market. Whenever a material fails to comply with the specification requirements, it is removed from the list and the manufacturer is notified that his certification of the product is no longer acceptable. Thus, although the Council cannot test the entire production of dental materials, its certification plan calls for continuous testing by the manufacturer and check tests by the Research Division so that a constantly high level of quality of the products on the list will be maintained. Revisions of the list appear in THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION from time to time.

Lately there have appeared through the

mail some advertisements for amalgam alloys, mercuries, zinc phosphate cements and acrylic resins with statements that the manufacturer guarantees them to comply with the specifications of the American Dental Association. An examination of the list of certified dental materials shows that some of the materials that have been so advertised have not been certified by their manufacturers to the Council on Dental Research. When a dentist sees a statement such as, "Every batch of this alloy is carefully tested before being released for shipment to be sure that it fully meets A.D.A. specifications," he should be certain to check the list of certified dental materials to see if the product appears there.

In the purchase of certified material for use in dental practice, this list should be used as a buyer's guide. In addition, the package of material received should be checked for its exact name as given in the list and for a statement thereon guaranteeing compliance with the specification. The Council should be notified of any discrepancies.

The materials appearing on this list will produce satisfactory restorations only if used properly. In almost all instances the respective manufacturer's directions should be rigidly adhered to in using a specific material. In other words, the technic of using is as important as the material for the simple reason that an inferior technic will ruin or damage a superior material. Changes, made frequently in this list, are printed in the Reports of Councils and Bureaus section of THE JOURNAL.

CERTIFIED DENTAL AMALGAM ALLOYS
(A.D.A. SPECIFICATION NO. 1, FIRST REVISION)

Alloy	*Manufacturer or distributor*
Accurate Metalloy (filings)	The L. D. Caulk Co.
Ames Alloy Quick Setting	The W. V-B. Ames Co.
Argentum "A"; Fine Cut; Medium Cut	Hammond Dental Mfg. Co.
Aristaloy	Baker & Co., Inc.
Baring (improved fine cut)	Baring Smelting & Refining Co.
Brewster Medium	Brewster Laboratories
Certified Non-Zinc	Lee Smith Co.
Cresilver	Crescent Dental Mfg. Co.
Dee (filings)	Kerr Mfg. Co.
Fellowship	Dental Protective Supply Co.
Filling Alloy	Pure-Lab Co. of America
Filling Alloy (fine grain)	Abe Bass
Fleck's	Mizzy, Inc.
Garfield's	Garfield Smelting & Refining Co.
Gem Regular; Fine Cut	Certified Dental Supply Corp.
Gold Bond	Jefferson Dental Supply Co.
H & M Special	Hauser and Miller
Linc-Alloy	Lincoln Dental Supply Co.
Lustraloy Regular	Pfingst & Co.
Midvalloy	Midvale Dental Supply Co.

Minimax (filings) 173, 177, 178, 178 Non-Zinc, 178 Fine Cut, 183, White Gold & Platinum; (shavings) 177, 178	The Minimax Co.
Mission No. 5; No. 5 "A" Cut; Fine Cut	Henry F. Bruce Co.
Modeloy (quick setting filings)	Crescent Dental Mfg. Co.
Mowrey 695 Fast; 695 Medium; 695 Fine Cut; 700 Non-Zinc; 700 Non-Zinc Fine Cut	W. E. Mowrey Co.
Mynol Improved	Mynol Chemical Co.
National Dental	Eskay Dental Products
New Deal	Miller Dental Co.
Oceanic Filling Alloy	Oceanic Chemical Co., Inc.
Odontographic "Improved" (filings)	Odontographic Mfg. Co.
Peerless	Herbert D. Damsky
Precision	Precision Bur Co.
Research Oralloy	Precious Metals Research Works, Inc.
Royal Super First Setting	Garhart Dental Specialty Co.
Safco 69	Safco Laboratories
Silver Crown (filings) Fast, Slow; (filings and pellets) Medium, Non-Zinc, Fine Cut, Fine Cut Non-Zinc	General Refineries, Inc.
Silverloy (filings and shavings); F. C. #20 for Proportioner	Crescent Dental Mfg. Co.
Silverman's Ex-cel	L. Silverman Dental Supplies
Speyer	Speyer Smelting & Refining Co.
S-C Medium (filings and pellets)	Stratford-Cookson Co.
Standard	Standard Dental Products Co.
Stratco	Edward P. Stratt
Tri-Alloy	Tri-Boro Dental Supply Co., Inc.
True Dentalloy (filings); Cut "A"; New; Zinc Free	The S. S. White Dental Mfg. Co.
Twentieth Century Regular; Special; Fine Cut; Non-Zinc; (filings and pellets) Micro, Micro Non-Zinc	The L. D. Caulk Co.
Ultra Brand Regular 68%; Fast Setting 68%; Improved 68%; 72% Silver	H. Jelinek Dental Alloys
White Beauty; Fine Cut	Lang Dental Mfg. Co.
Yates Balanced	Yates Dental Mfg. Co.

CERTIFIED DENTAL INLAY CASTING INVESTMENTS
(A.D.A. SPECIFICATION NO. 2)

Investment	*Manufacturer or distributor*
All Purpose, Formula No. 35	The S. S. White Dental Mfg. Co.
Baker Cristobalite	Baker & Co., Inc.
Beauty-Cast	Whip-Mix Corp., Inc.
Cristo-Vest	The Ransom & Randolph Co.
Kerr Cristobalite-Inlay	Kerr Mfg. Co.
Ransom & Randolph Gray	The Ransom & Randolph Co.
Steele's Super	The Ransom & Randolph Co.
S. S. White Formula 25	The S. S. White Dental Mfg. Co.

CERTIFIED DENTAL IMPRESSION COMPOUNDS
(A.D.A. SPECIFICATION NO. 3, FIRST REVISION)

Compound	*Type*	*Manufacturer or distributor*
Certified	I	Lee Smith Co.
Exact	I	The S. S. White Dental Mfg. Co.
Kerr Perfection; No. 2 Soft Green; Grey; White; Black	I	Kerr Mfg. Co.
Mizzy Low Heat	I	Mizzy, Inc.
S. S. White-Black-Tray	II	The S. S. White Dental Mfg. Co.

CERTIFIED DENTAL INLAY CASTING WAXES
(A.D.A. SPECIFICATION NO. 4, FIRST REVISION)

Wax	*Manufacturer or distributor*
Baker-Blue—Regular medium	Baker & Co., Inc.
Blue Inlay—Hard	The S. S. White Dental Mfg. Co.
Kerr-Blue—Hard	Kerr Mfg. Co.
Security	The Cleveland Dental Mfg. Co.
Taggart's Blue	Mizzy, Inc.

CERTIFIED DENTAL INLAY CASTING GOLD ALLOYS
(A.D.A. SPECIFICATION NO. 5)
TYPE A, SOFT

Alloy	*Manufacturer or distributor*
Aderer-A-Soft	Julius Aderer, Inc.
Baker Inlay Soft	Baker & Co., Inc.
Chilcast No. 1	Vernon-Benshoff Co.
Coe 1	Coe Laboratories, Inc.
Crown Inlay No. 2 Soft; K	General Refineries, Inc.
Deeone	Handy & Harman
GB Inlay No. 1 Soft	Goldsmith Bros. Dental Co.
Jelenko Special Inlay	J. F. Jelenko & Co., Inc.
Leff Light Inlay	Leff Dental Golds
Luft "A"	John Luft Prescription Alloys
Mowrey's S-1; S-M	W. E. Mowrey Co.
Ney-Oro A; AA	The J. M. Ney Co.
Noble No. 1	Noble Metals & Alloys Co.
Research A	Precious Metals Research Works, Inc.
Spyco Soft; Eleven	Spyco Smelting & Refining Co.
S. S. White No. 2; 900 Soft; 940 Very Soft	The S. S. White Dental Mfg. Co.
Stern S	I. Stern & Co., Inc.
Wildberg A-2	Wildberg Bros. Smelting & Refining Co.
Williams Inlay 3; Will-Cast 22; Harmony Line Soft	The Williams Gold Refining Co., Inc.

TYPE B, MEDIUM

Alloy	*Manufacturer or distributor*
Aderer-B-Medium	Julius Aderer, Inc.
Aleco No. 1; No. 2	A. L. Engelhardt Co.
Baker Inlay Medium	Baker & Co., Inc.
Chilcast M; 2M	Vernon-Benshoff Co.
Coe 2	Coe Laboratories, Inc.
Crown Inlay No. 1 Hard; Knapp No. 2; T	General Refineries, Inc.
Deetwo	Handy & Harman
GB Inlay No. 2 Medium Hard	Goldsmith Bros. Dental Co.
Jelenko Modulay; Platincast; J-8	J. F. Jelenko & Co., Inc.
Leff Medium Soft	Leff Dental Golds
Luft "B"	John Luft Prescription Alloys
Mowrey's B-Inlay; S-2; No. 91; T	W. E. Mowrey Co.
Ney-Oro A-1; A-10	The J. M. Ney Co.
Noble No. 2	Noble Metals & Alloys Co.
Spyco Inlay; Medium; Tinker One	Spyco Smelting & Refining Co.
S. S. White No. 1; No. 5; No. 820	The S. S. White Dental Mfg. Co.
Stern 1	I. Stern & Co., Inc.
Wildberg "A"	Wildberg Bros. Smelting & Refining Co.
Wilkinson 8M	Wilkinson Co.
Williams Pioneer; Special Inlay; One "Inlay"; Harmony Line Medium	The Williams Gold Refining Co., Inc.

TYPE C, HARD

Alloy	*Manufacturer or distributor*
Aderer-C-Bridge; "Dressel"	Julius Aderer, Inc.
Baker Hard Inlay	Baker & Co., Inc.
Chilcast No. 2; No. 2-H	Vernon-Benshoff Co.
Coe 3	Coe Laboratories, Inc.
Crown No. 9; Knapp No. 3; Supreme Inlay; TT	General Refineries, Inc.
Deesix	Handy & Harman
Dent Gold No. 2	A. Szabo Company, Inc.
GB Inlay No. 3 Hard	Goldsmith Bros. Dental Co.
Jelenko Durocast; Firmilay; J-9	J. F. Jelenko & Co., Inc.
Leff C	Leff Dental Golds
Luft "C"	John Luft Prescription Alloys
Mowrey's S-3; Special; No. 120; TT	W. E. Mowrey Co.
Ney-Oro B; B-2	The J. M. Ney Co.
Noble No. 3	Noble Metals & Alloys Co.
Research No. 5; "Inlay"	Precious Metals Research Works, Inc.
Spyco No. One-H; Six; Tinker Two; Hard	Spyco Smelting & Refining Co.
S. S. White No. 8; No. 13; 860 Hard	The S. S. White Dental Mfg. Co.

Stern 2; 3337; H	I. Stern & Co., Inc.
Wildberg "C"; B	Wildberg Bros. Smelting & Refining Co.
Williams Klondiker; Special "Four"; Harmony Line Hard	The Williams Gold Refining Co., Inc.

CERTIFIED DENTAL MERCURIES
(A.D.A. SPECIFICATION NO. 6)

Mercury	*Manufacturer or distributor*
Argentum	Hammond Dental Mfg. Co.
Ballard's	Quicksilver Producers Association
Chemically Pure	The S. S. White Dental Mfg. Co.
Chemically Pure	Stratford-Cookson Co.
C. P. Mercury	Goldsmith Bros. Dental Co.
C. P. Mercury	H. Jelinek Dental Alloys
Crown	General Refineries, Inc.
Dental	Drug Laboratories, Inc.
Dental, C. P.	F. W. Berk & Co., Inc.
Fellowship	Dental Protective Supply Co.
Garfield's	Garfield Smelting & Refining Co.
Garhart's Positively Pure	Garhart Dental Specialty Co.
Krause's Pure	Krause Gold Refineries
Merck Redistilled N.F.	Merck & Co., Inc.
Mercury C. P.	Metalsalts Corp.
Mercury C. P.	Wildberg Bros. Smelting & Refining Co.
Mercury N.F. IX Redistilled	Mallinckrodt Chemical Works
Mercury Triple Distilled C.P.	Laboratory Products Co.
Minimax	The Minimax Co.
Mission	Henry F. Bruce Co.
Mowrey Mercury	W. E. Mowrey Co.
Mynol	Mynol Chemical Co.
Ney	The J. M. Ney Co.
Odontographic	Odontographic Mfg. Co.
Research	Precious Metals Research Works, Inc.
Spectropure	Baker & Co., Inc.
Spyco	Spyco Smelting & Refining Co.
Triple Distilled Mercury	Eastern Smelting & Refining Co.
Triple Distilled Mercury C.P.	Oceanic Chemical Co., Inc.
Twentieth Century	The L. D. Caulk Co.
Ultra Pure Mercury	Theta Corporation
Williams	The Williams Gold Refining Co., Inc.

CERTIFIED DENTAL WROUGHT GOLD WIRE ALLOYS
(A.D.A. SPECIFICATION NO. 7)

Alloy	*Manufacturer or distributor*
Aderer No. 20 Clasp	Julius Aderer, Inc.
Baker Q. A.	Baker & Co., Inc.
Crown Hylastic	General Refineries, Inc.
Deepep-Hard	Handy & Harman
GB Regular High Fusing	Goldsmith Bros. Dental Co.
Jelenko No. 3 Wire; Super Wire	J. F. Jelenko & Co., Inc.
Ney-Oro Elastic No. 4	The J. M. Ney Co.
Spyco No. 2; No. 4	Spyco Smelting & Refining Co.
S. S. White No. 12; No. 61 Metalba	The S. S. White Dental Mfg. Co.
Stern No. 2657	I. Stern & Co., Inc.
Vernon-Benshoff Clasp Wire No. 6	Vernon-Benshoff Co.
Williams No. 1 Super; No. 2 High Fusing Clasp; No. 3 High Tensile	The Williams Gold Refining Co., Inc.

CERTIFIED DENTAL ZINC PHOSPHATE CEMENTS
(A.D.A. SPECIFICATION NO. 8, FIRST REVISION)

Cement	*Manufacturer or distributor*
Ames Z-M	The W. V-B. Ames Co.
Bosworth's Zinc	Harry J. Bosworth Co.
Caulk Crown and Bridge; Tenacin	The L. D. Caulk Co.
Certicem	Lee Smith Co.
Fleck's Extraordinary	Mizzy, Inc.
Lang Crown Bridge and Inlay	Lang Dental Mfg. Co.
S-C	Stratford-Cookson Co.
Smith's	Lee Smith Co.
S. S. White Silver Improved; Zinc; Zinc Improved	The S. S. White Dental Mfg. Co.

CERTIFIED DENTAL SILICATE CEMENTS
(A.D.A. SPECIFICATION NO. 9, FIRST REVISION)

Cement	*Manufacturer or distributor*
Achatite	Vivadent Corporation
Ames Plastic Porcelain	The W. V-B. Ames Co.
Astralit	Premier Dental Products Co.
Baker Plastic Porcelain	Baker & Co., Inc.
DeTrey's Synthetic Porcelain; Syntrex	The L. D. Caulk Co.
Durodent Enamel	Oskar Schaefer
Smith's Certified Enamel Improved	Lee Smith Co.
S. S. White Filling Porcelain Improved; New Filling Porcelain	The S. S. White Dental Mfg. Co.

CERTIFIED HYDROCOLLOIDAL IMPRESSION MATERIALS—AGAR TYPE
(A.D.A. SPECIFICATION NO. 11)

Material	*Manufacturer or distributor*
Deelastic	Kerr Mfg. Co.
Dentocoll	The L. D. Caulk Co.
Elastic Colloid	The S. S. White Dental Mfg. Co.
Kerr Hydro-Colloid	Kerr Mfg. Co.
Perfectocoll	Baker & Co., Inc.
Surgident	Surgident, Ltd.

CERTIFIED DENTURE BASE RESINS
(A.D.A. SPECIFICATION NO. 12, SECOND REVISION)
TYPE I, HEAT-CURING

Material	*Form*	*Manufacturer or distributor*
Acralite	Clear; pink; powder-liquid	Acralite Co., Inc.
Acralite RL	Pink; powder-liquid	
Acri-Lux	Pink; powder-liquid	Acri-Lux Dental Mfg. Co.
Acrylic A Pink	Pink; powder-liquid	Austenal, Inc.
Mottled	Pink; powder-liquid	
Orange-Pink	Pink; powder-liquid	
BioLux "521"	Pink; powder-liquid	B. L. Dental Co., Inc.
Characterized Lucitone	Pink; powder-liquid	The L. D. Caulk Co.
Densene 33	Clear; pink; powder-liquid	Cosmos Dental Products, Inc.
Densene 33 Varihued	Pink; powder-liquid	
Denture Acrylic	Clear; pink; powder-liquid	The S. S. White Dental Mfg. Co.
Duolite 2	Pink; powder-liquid	Acralite Co., Inc.
Duraflow	Pink; powder-liquid	Product Research Lab., Inc.
Enciton	Pink; powder-liquid	The L. D. Caulk Co.
Hygienic	Pink; powder-liquid	The Hygienic Dental Mfg. Co.
Hy-Pro Lucitone Standard	Pink; powder-liquid	The L. D. Caulk Co.
Hy-Pro Lucitone Fibered	Pink; powder-liquid	
Improved Justi-Tone T-3	Pink; powder-liquid	H. D. Justi & Son, Inc.
Jectron	Pink; precured blank	Toledo Dental Products Co.
Lang's	Pink; powder-liquid	Lang Dental Mfg. Co.
Lucitone	Clear; pink; powder-liquid	The L. D. Caulk Co.
Luxene 44	Pink; plastic cake	Luxene, Inc.
Miracryl	Pink; powder-liquid	The Motloid Co., Inc.

Palatex	Pink; powder-liquid	Rockland Dental Co., Inc.
Palatex Mottled	Pink; powder-liquid	
Perma Cryl	Pink; powder-liquid	Acri-Lux Dental Mfg. Co.
Permatone	Clear; pink; powder-liquid	Acralite Co., Inc.
Tilon	Pink; plastic cake	Ticonium Division, Consolidated Metal Products Corp.
Vernonite-Chromavein	Pink; plastic cake	Vernon-Benshoff Co.
	Pink; powder-liquid	
Vernonite	Clear; pink; plastic cake	Vernon-Benshoff Co.
	Pink; powder-liquid	
Vitacrilic	Pink; powder-liquid	Fricke Dental Mfg. Co.
Vita-Lite	Pink; powder-liquid	Vita-Lite Products Co.
Vitalon Even Tone	Pink; powder-liquid	Austenal, Inc.
Vitalon Mottle Tone	Pink; powder-liquid	
Vitalon Tissue Tone	Pink; powder-liquid	

TYPE II, SELF-CURING

Material	*Form*	*Manufacturer or distributor*
Acralite 88 Tissue Tone	Pink; powder-liquid	Acralite Co., Inc.
Acralite 88 True Life	Pink; powder-liquid	
Densene 33	Pink; powder-liquid	Cosmos Dental Products, Inc.
Palatex 51	Pink; powder-liquid	Rockland Dental Co., Inc.

CERTIFIED SELF-CURING REPAIR RESINS
(A.D.A. SPECIFICATION NO. 13)

Material	*Form*	*Manufacturer or distributor*
Acralite 88	Pink; powder-liquid	Acralite Co., Inc.
Bindit	Pink; powder-liquid	Rockland Dental Co., Inc.
Dyna-Set	Pink; powder-liquid	Cosmos Dental Products, Inc.

CERTIFIED DENTAL CHROMIUM-COBALT CASTING ALLOYS
(A.D.A. SPECIFICATION NO. 14)

Material	*Manufacturer or distributor*
Rx Dental Alloy	Vita-Loy Processing & Products, Inc.
Vitallium	Austenal, Inc.

CERTIFIED ACRYLIC RESIN TEETH
(A.D.A. SPECIFICATION NO. 15)

TYPE I, ANTERIOR

Material	*Manufacturer or distributor*
Dura-Blend	Myerson Tooth Corp.
Justi S-R	H. D. Justi & Son, Inc.
Trubyte Biotone	Dentists' Supply Co.
Verident	Universal Dental Co.

TYPE II, POSTERIOR-ANATOMIC

Material	*Manufacturer or distributor*
Dura-Blend FLX	Myerson Tooth Corp.
Justi S-R	H. D. Justi & Son, Inc.
Trubyte Biotone Pilkington Turner Trubyte Dentron 20°	Dentists' Supply Co.

TYPE III, POSTERIOR-NONANATOMIC

Material	*Manufacturer or distributor*
Dura-Blend Shear Kusp	Myerson Tooth Corp.
Justi S-R	H. D. Justi & Son, Inc.
Trubyte Biotone Rational	Dentists' Supply Co.

Additions to the Library

BUREAU OF LIBRARY AND INDEXING SERVICE

The books listed here have been added recently to the Library collection. Requests for this material, available on loan to all members of the Association, should be addressed to the Bureau of Library and Indexing Service. There is no charge for borrowing books, but there is a minimal charge of one dollar for each package library. Practically all the dental journals published in the world at present are available also to members on loan. Lists of books and package libraries are also available on request.

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Council program in methods of payment for dental care

COUNCIL ON DENTAL HEALTH

The following report concludes a series of five which will constitute a manual to guide state dental societies in the development and operation of their councils on dental care, or equivalent agency. The other four reports were published in the April, May, June and July issues of THE JOURNAL: "Methods of Payment for the Group Purchase of Dental Care: Policies of the American Dental Association," parts I and II; "The State Dental Society Council on Dental Care," and "Council Program in Dental Practice."

The Council has divided the methods of payment for dental care into four categories:

1. Cash resources of the individual
2. Budget payment, using the resources of financing agencies
3. Group purchase, using the resources of specific groups
4. Group purchase, using the resources of insurance companies.

In the group purchase of dental care, there are three basic mechanisms for making services available: (1) through the dental service corporation which provides the services in the practice of the patient's choice; (2) through insurance plans which provide financial support to the policyholder for meeting the costs of the care; (3) through the comprehensive health facility operated by or for the purchasing group and using the services of salaried professional personnel. The foregoing administrative mechanisms have been supported sufficiently by the public to indicate their continued existence.

The Council has established a committee on methods of payment to develop and direct appropriate studies. It is composed of three members of the Council and utilizes consultants in the fields of banking, finance, law, insurance, tax and accounting as required by the particular problems under consideration. This committee establishes priorities for studies, designs them and promotes their conduct and financing by agencies with the proper facilities and resources. It publishes and disseminates pertinent information. It is concerned also with problems associated with the availability of dental care for segments of the population which present special problems, such as the needy, the aged and those requiring vocational rehabilitation. Such programs involve the distribution of dental care through the facilities of private practice and payment for the care.

The Council has compiled and published extensive information on methods of payment based on existing experience in the field. Two pamphlets have been

published, one on group purchase plans[1] and one on budget payment plans.[2] The annual National Dental Health Conference has considered insurance coverage for dental care, the dental service corporation, budget payment and the special problems of group purchase of dental care for the recipients of public assistance as well as some of the basic problems in the purchase of dental care through the cash resources of the individual. These latter problems have had the continuing attention of the dental profession in that cash resources have furnished the main support for the purchase of dental care since the inception of the profession.

The Conferences have produced many significant papers for publication in THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION as well as provided the format for panel presentations at scientific sessions of the Association. The panels, in turn, have added to THE JOURNAL articles on many facets of methods of payment. Additionally, through reprints of pertinent papers and Council reports in THE JOURNAL, the Council has been able to provide information on the current status of methods of payment to dental societies, individual dentists and various agencies. The Council also has developed adequate policy recommendations which have been adopted by the House of Delegates to support its program in this area (see elsewhere in this manual).

It is expected that the committee on methods of payment will now be able to develop studies on specific questions that will provide solutions for many of the symptomatic problems which have not been fully disclosed through the statistics and information evolving from the administration of a program itself. The committee, with proper guidance from business, finance, legal and tax consultants, will concern itself with speculative consideration of future patterns of administration of the various methods of payment. It will also promote studies showing the major effect of a particular method of distribution and of payment on the various economic segments of the population.

The Council believes that the committee should develop liaison with agencies whose operations relate to the financing of health care. Examples of such organizations are management groups, through their security and welfare divisions; employee benefits consultants; the Health Insurance Association of America; the National Association of Blue Shield Plans; the Blue Cross Commission, and the American Bankers Association. The Council believes that, through consultation with these groups, sound studies can be developed that will give positive direction to the establishment of policies and programs that are in the combined interest of the public and the dental profession. The existing information has limited the dental profession to a defensive approach to the problems of group purchase of dental care and a response to pressures with solutions that are readily available. Too often, these solutions tend to duplicate the errors and faults which exist in present medical, hospital and insurance plans.

Examples of studies for which the need is already apparent include:

1. Determination of criteria for dental records that will furnish adequate support for claims and payment in group purchase programs.

2. Development of projects designed to improve the operation of budget payment programs for dental care.

There is evidence that such programs can be operated at a preferred rate of interest to the consumer and without some of the cumbersome administrative features and costly loss reserve mechanisms now in use.

3. Determination of the extent to which budget payment programs are used by dentists and of improvements in communication and service that would expand utilization.

4. Determination of the segments of the population that can make the best use of budget payment in the purchase of their dental care.

5. Determination of features of budget payment plans, as presently operated, that are adding unnecessary costs both for the patient and the dentist.

The banking operation could be enhanced by a thorough study in cooperation with the American Bankers Association.

6. Attention to the tax problems related to the management of loss reserve funds in budget payment plans, both as to the disposition of excess loss reserve funds and as to the creation of large loss reserves.

7. Determination of the benefits to be gained from programs for the purchase of dental care that combine group purchase and budget payment in their operation.

8. Expansion of the function of dental service corporations beyond the limitations of administering the group purchase of dental care.

It may well be that budget payment administration, professional management services, credit and collection services are proper additional areas of function for dental service corporations. It may be that the inclusion of a full scope of management, credit and payment services within the activities of service corporations will make them self-sustaining on a not-for-profit basis in addition to keeping such services under close professional supervision. Undoubtedly they could supply much needed services to resolve some of the burdensome complexities of dental practice now and in the future.

The Council will continue to compile and disseminate information as it becomes available. However, it cannot emphasize too strongly its conviction that the maintenance of the tried and proved attributes of private dental practice and the integrity of the dentist-patient relationship will require that all of the elements of organized dentistry be acquainted with the facts of dental care provided under the aegis of true professional control.

The facts as to the criteria of sound dental health and dental care, the best dentist-patient relationship in which high quality care can be made available, the methods of dental practice which will produce such an environment and the realistic costs of dental care made available through such methods of dental practice can be made apparent to the purchasing public only by a dental profession which is thoroughly familiar with its own facts. The Council believes that the organized dental profession must be prepared to finance a positive program of studies to develop the facts, with the advice and assistance of qualified consultants. If the basic financial support of such a program is available from the profession itself, additional grants could be sought from other private sources.

It is the opinion of the Council that a program for socioeconomic studies on the distribution of dental care is of sufficient importance not only to warrant the basic contributions of the profession itself but to interest other voluntary sources sufficiently to generate their contributions. With adequate support of this type, the dental profession could assume its proper professional supervision of the program to the extent that, if supplemental grants from government agencies were sought and utilized, the administration of the total program would remain within the organized dental profession. The Council, therefore, would recommend the following priorities of responsibility for funding the program:

1. Contributions from the organized dental profession

2. Contributions from the dental manufacturers and trade

3. Contributions from private industry, management and labor through their

interest in the health of the ultimate consumer of dental care

4. Contributions from government grant agencies.

STATE DENTAL SOCIETY ACTIVITIES

The Council has outlined its interests in constituent society activities to include:

1. The development of an agency within the society to deal with the problems associated with increasing the distribution of dental care within the state

2. The provision of proper bylaw support and budget for the agency's program and operation

3. The development of an adequate program for the agency that will make the state society the authoritative source of advice and assistance for the development of programs in dental care

4. The administrative pattern and problems of the dental division of the state health department

5. Cooperative action of the dental society and the state dental division.

The Council has devoted a great deal of its activity to the development of information for state dental societies in the foregoing areas. Examples are: "The State Council on Dental Health Program and the Support Available From the Association,"[3] "The Program of a State Health Department's Dental Division,"[4] "Determination of Costs for Programs for the Group Purchase of Dental Care,"[5] "Budget Payment Plans for the Individual Purchase of Dental Care,"[2] "Trends in the Development of Methods of Payment for Dental Care,"[6] a survey of state dental division programs,[7] a symposium on dental practice and dental fees[8] and articles on dental service corporations[9,10] public assistance dental care programs[11-13] and programs for the chronically ill and aged.[14-17]

The Council has stimulated constituent dental societies to develop pertinent information on the costs of dental care within their states. Through its committee on methods of payment the Council has also considered the role of the dental societies in the initial or pilot stage of development of the various methods of payment and their continuing or long-term responsibilities.

In 1955, the Council observed that a commercial enterprise generally accumulates those statistics which will improve its business operation but that in dental care programs the sponsoring agency might not be concerned with many of the public health statistics which would be valuable to such programs. The following policy on the role of state dental societies in statistical evaluation of group dental care programs was adopted that year by the House of Delegates:[18]

Resolved, that the constituent dental societies be advised that the statistical evaluation of group dental care programs is properly the responsibilty of the agencies sponsoring and operating such programs in conjunction with the constituent dental societies. This evaluation should be conducted in cooperation with the American Dental Association through the constituent dental societies.

The value of the working conference mechanism in the development of policy recommendations, in the self-education of dentists on problems associated with the changing socioeconomic environment in which the profession must operate and in the development of new information on such subjects has been well demonstrated in the annual National Dental Health Conference conducted by the Council. The Council has promoted the development of the dental health conference by state societies and has found the results encouraging.

The national conference is supervised by the Council's committee on state dental health activities and public health department administrative problems. This committee should consult with representatives of state councils on dental health. It should also supervise the ac-

tivities of the Council in relation to state society support of dental public health programs.

SUMMARY

If the public is to be aware of the criteria for sound dental health and care, the best dentist-patient relationship for making high quality care available, the methods of dental practice which will produce such an environment and the realistic costs of dental care made available through such methods of practice, the dental profession must be familiar with its own facts. A profession so informed is a goal of the Council's program in methods of payment for dental care.

The Council has compiled and published extensive information on methods of payment based on existing experience in the field. Such information, which includes operating experiences of various plans, has delineated socioeconomic problems which require specific study. The Council, with advice from appropriate agencies, will design such studies and determine the agencies with the proper facilities and resources to conduct and finance them. It is the belief of the Council that basic financial support for such socioeconomic studies must come from the profession itself if it is to retain professional supervision of the program in the interest of the public and the profession.

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Dental society, merchants association cooperate to promote dental health for children

BUREAU OF DENTAL HEALTH EDUCATION

Many communities, large and small, have an organization of merchants whose purpose is to attract people to the various shopping areas. This report has been written to suggest to dental societies the possibilities of cooperating with such organizations in planning their Children's Dental Health Week programs.

In Indianapolis, it all began with conversations between the dental health week chairman and his neighbor, Hal Silver of L. S. Ayres & Company, an Indianapolis department store. Mr. Silver was interested in the Indianapolis Dental Society's problem of promoting Children's Dental Health Week and arranged a meeting with John Barnett, the director of the Indianapolis Merchants Association's promotion division.

As a result of this meeting, the Merchants Association and the dental society agreed to cooperate in developing a smile contest to be held in the downtown Indianapolis area. This would bring individuals to the shopping area, and, at the same time, the merchants would be contributing to a community health project. The dental society recognized that a highly organized and adequately financed promotion campaign would enable it to tell the children's dental health story much more widely and more effectively.

$5,000 BUDGETED

The Merchants Association agreed that the dental society should have the responsibility for planning and organizing the entire campaign. The Association assigned its entire promotional budget for February, $5,000, to the Children's Dental Health Committee, to be used for purchasing time on radio and television to promote the smile contest. Ordinarily this money would have been used by the merchants to buy television time to promote sales in the downtown area. In addition, the Merchants Association provided $500 for operating expenses connected with the Children's Dental Health Week program. This amount was matched by the dental society.

Since so large a sum was to be spent for promotion, a field with which the average dentist had little or no experience, a professional public relations consultant was retained by the dental society. He was Keith Bratton of Kiley and Nicholas, who also served as consultant to the Merchants Association.

Through Mr. Bratton's efforts, radio and television stations gave public service time for dentists and dental hygienists to tell the children's dental health story. He also purchased time and wrote copy

Seated at an information desk in the hotel lobby, Patricia Barker directs parents and children to the Smile Contest. Miss Barker is a dental hygiene student at Indiana University School of Dentistry. The poster was designed by a display artist employed by an Indianapolis department store

for 134 spot announcements for radio and television, promoting the smile contest in the downtown area. Producers of locally sponsored programs also cooperated. Newspapers and radio and television stations all gave advance publicity to the contest and thoroughly covered both the consultation clinic, where the preliminary judging was done, and the awarding of prizes at a banquet.

Placement of copy was the consultant's responsibility. However, no copy was released for publication until it had been approved by at least two members of the professional conduct committee.

The four members of this committee were responsible for developing a simple, workable policy for ethical conduct for the profession. The policy read: "Any member of the Indianapolis District Dental Society whose photograph appears or who personally appears in any medium of public information as a means of promoting National Children's Dental Health Week shall be considered as acting for the Indianapolis District Dental Society in an ethical manner."

ADVANCE PLANNING REQUIRED

The importance of pre-planning such a Children's Dental Health Week program in writing at least six months in advance cannot be overemphasized.

Indianapolis' chairman selected representatives from the dental society, Indiana University School of Dentistry, the dental health division of the Indiana Board of Health, the woman's auxiliary, the Health and Welfare Council, the public schools, the dental supply companies and private businesses. This group was responsible for developing a children's dental health promotion, for naming committee chairmen and members and for determining the committees' objectives.

COMMITTEES NAMED

Following are the committees and their responsibilities:

Smile Contest—to develop rules and mechanics, select sites and judges and obtain dental equipment for the smile contest.

Consultation Clinic—to select dentists for consultation at smile contest eliminations; to develop policy for consultations with parents and conduct training session for consultants; to prepare and distribute consultation cards.

Schools Promotion—to confer with school officials to help plan and approve school dental health programs; to utilize health class and regular classroom announcements or special dental assembly programs; to select hall exhibits and posters; to encourage school clubs to support the program through various activities.

Speakers' Bureau—to organize and conduct a speakers' bureau on children's dental health; to get in touch with church, civic and social organizations to try to arrange for them to hear a speaker on dental health.

Public Information—to prepare and review public information; to arrange for television and radio shows and newspaper

Two dental hygienists, Mrs. Josephine Shumm and Carol Arnold, use a flip chart to explain to children in the educational unit the process of dental decay and how decay can be prevented

A dental hygienist, Mrs. Josephine Shumm, explains the objectives of the Smile Contest to a group of parents and children who are seated in the waiting area

coverage; to fabricate displays for stores, elevators and window displays and obtain public service billboard space. (Each committee member acted as liaison between the committee and a particular newspaper or radio or television station and prepared information especially for that medium. Mr. Bratton, the public relations consultant, worked closely with this committee. For instance, Mr. Bratton would arrange for an interview with a dentist on a television program. Then he would call the public information committee member responsible for that station, who would in turn request a doctor to appear on the program.)

Children's Dental Health Meeting of Indianapolis Dental Society—to plan a program to which representative members of the press, radio, television and the Merchants Association would be invited. (Each member of the public information committee invited as his guest the program director or editor with whom he had worked. Dentists' wives and assistants were asked to invite a physician and his wife as their guests.) Also to award the smile contest prizes; to invite a nationally known speaker capable of speaking on children's dental health before such a mixed audience.

PLANNING PROGRESSES

An organizational meeting was held in September. The steering committee and subcommittees received specific program assignments and a general orientation concerning the purpose and objectives of the program. In November, the subcommittee chairmen gave progress reports.

The steering committee, aware that the success of the program depended on the enthusiasm of and individual promotion by dentists, initiated a direct campaign of information about the program within the dental society. Then women's auxiliary members and dentists made telephone calls to stimulate interest in and enthusiasm for what the dental society was doing.

A calendar of events for the children's dental health program, plus a memorandum, was sent to all members of the dental society, women's auxiliary members, dental hygienists and dental assistants. The memorandum discussed the program briefly and urged dentists to volunteer to help with the program.

From January 5 to 15 women's auxiliary members delivered dental health week posters and a supply of invitations to the smile contest to every dental office in the city. Dentists were asked to (1)

display the posters prominently in their reception rooms; (2) encourage their child patients to enter the smile contest by giving invitations to them and by using the invitation as an enclosure for statements.

The final planning meeting for all dental society members and other persons involved was held in January. Final plans were reviewed, and each dentist was given packets of smile contest invitations and posters to deliver personally to the school or schools near his office on February 2 and 3. This made it possible for each principal to receive a personal explanation of the program. The superintendent of schools had told the principals, at a meeting February 1, to expect the dentists' visits.

OPERATION OF CONTEST

The Claypool Hotel provided three rooms for the contest judging, without charge. Four dental units and an x-ray machine were furnished and installed by three dental supply houses. Indiana University School of Dentistry and the Dental Division of the State Board of Health furnished the dental instruments and supplies.

Dental hygienists staffed the information desk in the lobby, the consultation clinic and the education unit. Four dentists staffed the consultation clinic, with a pedodontist and an orthodontist available for further consultation in the finalist clinic.

Pre-school children and children in kindergarten and Grades 1 through 6 were eligible to enter the smile contest. When the children and their parents entered the clinic, they received an explanation of the purpose of the contest and how the clinic operated.

Each child was given a mirror and explorer examination in the consultation clinic. The dentist then revealed his findings to the parents, answered questions and made suggestions as to how the child's dental health might be improved. Members of the finalist group were selected on the basis of these criteria:

1. Freedom from active dental carious lesions.
2. Functional occlusion for dental age.
3. Freedom from inflammation of the gingiva and from pathological conditions of the supporting and oral structures.
4. No prematurely lost deciduous or permanent teeth.

Children meeting these criteria were sent to the finalist clinic, which was staffed by an orthodontist and a pedodontist. Bitewing roentgenograms were taken which were developed and read by pedodontic graduate students at Indiana University School of Dentistry. Dentists used the same four criteria in judging children in this finalist clinic.

Children who failed to meet the criteria in the consultation clinic were sent directly to the educational unit. All children and their parents eventually reached this unit, where they observed a toothbrushing demonstration, a story animated on a flannel board and a dental health education film.

LAY JUDGES CHOOSE WINNERS

Three lay judges made the final selection of winners of the contest. They were asked to consider physical appearance and other characteristics. This proved to be the most painful part of the contest. There were 26 children with perfect teeth, each fully expecting to win. No one envied the judges.

First prize was an all-expense paid trip to Disneyland for the child and one parent. Second and third prizes were $100 and $50 gift certificates redeemable at any downtown store for a child's wardrobe.

The grand finale of the contest was a banquet, held to honor the contest winners and to express appreciation to everyone who participated in the program.

PLANNING FOR NEXT YEAR

In commenting on the smile contest, the chairman said:

National Children's Dental Health Week has never been promoted so extensively in metropolitan Indianapolis. This alone made the program a success. Thousands of children and their parents were exposed to information stressing the importance of children's dental health. Many of these actually participated in the program and received professional consultation. Nearly every dentist and other persons involved in community dental services participated. In effect, every member of the Merchants Association became involved in a program of community dental service.

Planning for next year's program began in the spring. There are weaknesses which can be overcome. This will mean earlier promotion, with added emphasis on face-to-face contacts by the dentists. The clinic hours should be scheduled during school vacation days and possibly restricted for a more effective use of the time available. The great interest of the children and their parents in the educational unit was underestimated. It took 20 or 30 minutes of their time, and very few bypassed it.

More effective use can be made of television in educating the public on good dental care. We anticipate actually doing dentistry for children in the studio with an entire dental office setup. Programs would be taped for later showing. This would have good audience appeal for the station, and it has already voiced an interest in such a series of programs.

This report is not intended to serve as a blueprint for a Children's Dental Health Week program. It is published simply in an attempt to show dental societies how community groups can be brought into the planning for a program to promote dental health for children.

Association urges deferral of aged health care proposals

COUNCIL ON LEGISLATION

Just prior to the recess taken by Congress to permit the two political parties to nominate their presidential candidates, the Senate Finance Committee announced its decision to hold two days of hearings on H.R. 12580, the Social Security Amendments Act of 1960, which had been passed by the House on June 23. Title VI of the bill contained a moderate program to provide additional health care for persons 65 years of age and over utilizing the standard public assistance mechanism.

The passage of the bill by the House prompted introduction of a rash of health bills for the aged in the Senate, most of them far-reaching versions of the controversial Forand bill which would add a health care benefits program to the O.A.S.D.I. provisions of the Social Security Act. These measures were being strongly advanced as substitutes for the more moderate provisions of H.R. 12580.

Following is the text of the statement presented to the Finance Committee by the Association urging that no action be taken on such proposals prior to full hearings and the completion of the 1961 White House Conference on Aging.

The Association's primary concern at this time is not with H.R. 12580, which by and large is an extension and modification of existing social security programs, but with the various new and sweeping proposals that have been and are being advanced as substitutes for Title VI of H.R. 12580 relating to health care programs for people 65 years of age and over. Accordingly, because of the limitations of time that have been established, this presentation is confined to a brief statement of the Association's position that the committee should not undertake at this time to consider aged health care proposals that go beyond that contained in H.R. 12580 (Appendix 1 contains a suggestion for amending H.R. 12580.)

As indicated in a telegram submitted to the chairman of the Senate Finance Committee late Tuesday afternoon, June 28, the American Dental Association does not believe that the complex subject of health care for the aged can be given adequate consideration in the two days of hearings that have been scheduled.

The Association believes the Finance Committee will make a serious and irretrievable mistake if it departs in this instance from the traditional and sound legislative procedure of reporting important legislation only after there have been full hearings and the members of the committee have had sufficient opportunity to give careful study to such legislation and the problems sought to be corrected thereby.

To this Association's knowledge, the Finance Committee has never held hearings on the health care problems of the aged or on any of the pending legislative proposals related thereto.

Hearings before other agencies on the general subject of aged and aging have demonstrated the vast areas of disagreement regarding the nature of the health problems of

the aged, and the many and varied approaches that have been made toward meeting these problems. The Congress recognized this in 1958 when, ostensibly with full knowledge and deliberateness, it enacted legislation establishing an elaborate program and machinery for holding a White House Conference on Aging in January, 1961 at which representatives from all states and interested public and private agencies will have an opportunity to participate. It would appear to this Association that to take action now on far-reaching and irreversible federal programs dealing with the very subject to be taken up by the 1961 Conference would be entirely inconsistent with the previous action. Moreover, much of the extensive work that already has gone into preparations for the conference will have been wasted and no regard will be paid by the Congress to the creature it created to "make recommendations for a course of positive action in dealing with the problem of aging."

The effect of precipitous action by Congress at this stage would be to ignore completely the action and serious preparations for the 1961 Conference that have been made by 53 states and territories.

It is entirely possible that information, evidence and recommendations will be developed at this conference which will show that many of the plans being put forward for consideration of the Finance Committee are not best suited for meeting the problems of the aged. Surely, action by the committee on new and untried programs should be deferred to permit a balancing of the conflicting proposals and a weighing of the evidence in support of each of them.

Moreover, the entire legislative situation surrounding health care of the aged appears to be in a state of confusion. According to newspaper reports, several members of the Finance Committee have within the last day or two introduced new aged health proposals that previously have not been available for evaluation and study. Other proposals suggested for consideration of the committee have not even been drafted in legislative form so that, at best, the committee and other interested agencies and individuals have only a vague and general frame of reference.

The majority of the measures now being offered and announced in the press as substitutes for Title VI of H.R. 12580 have never been subjected to public hearings before any committee of Congress. Even the controversial Forand bill, elements of which are contained in several pending proposals, received only limited consideration in the House of Representatives. The same is true of Title VI of the House-passed bill H.R. 12580, although it is recognized that this proposal is in essence an extension or augmentation of existing programs that are well known to the committee.

This Association is opposed to the proposals which would introduce a vast federal health program as a part of the O.A.S.D.I. provision of the Social Security Act. It is believed strongly that these measures to make the federal government the sole purchaser of health care services for people over 65 would not be in the country's best interests.

It is reasonable to expect that once a program of this kind is adopted it will be extended until all health services are included for the entire population. This kind of system is certain to place undesirable limitations on the availability of health personnel and facilities both for people over 65 and for those in other segments of the population. In addition, under such programs, the providers of health services unquestionably would be brought under the domination and regimentation of their sole consumer, the federal government, and this would result in a lowering of health care standards as it has in other countries.

The dental profession is especially fearful that adoption of a government program concentrating care on adults will result in the neglect of children's health needs. This has occurred in England and is completely contrary to all accepted professional standards of dental health care.

There is also the real concern that manpower, facilities and other resources will be diverted from the preventive research and other programs which hold out man's greatest hope for freedom from suffering and disease.

These are but a few of the considerations that should be taken into account by the committee.

The committee also should obtain information on the extent to which hospitals, in particular, will be able to deliver the services envisioned in the Forand bill and similar measures and the extent, if any, to which people other than aged who are in need of hospital and medical care may be displaced. There also is the basic question of whether the greatest health need of the aged is in the form of hospital care or in the form of less intensive care.

The committee should also receive evidence to determine whether the needs of the aged would be served best by a program based on personal investigations and decisions at the local level or on stereotyped categorical rules made at the federal level.

Many, many other serious problems are involved in the legislation which are deserving of deep study and analysis that cannot be

accomplished in the hectic atmosphere of the few remaining days of Congress and in the heat of the Presidential and Congressional election campaigns that are now in progress.

Programs as far reaching and permanent in nature as those being proposed require sober, statesmanlike consideration and strict adherence to sound, deliberative legislative procedures.

Most, if not all, of the aged health proposals before Congress include provision of dental services in varying extent. The American Dental Association believes that, as the representative of approximately 100,000 dental practitioners, it has a vital and important interest in such legislation and should be accorded full opportunity to communicate its views in detail to the committee.

The American Dental Association strongly recommends, therefore, that the Finance Committee not act upon new aged health care programs until it has had an opportunity to hold comprehensive hearings and to review the proceedings and recommendations that will be forthcoming from the 1961 White House Conference on Aging.

APPENDIX I

The American Dental Association wishes to bring to the committee's attention a provision included in Title VI of H.R. 12580 which introduces a standard for determining eligibility for "major dental treatment" that is professionally unsound and unrealistic.

The provision referred to is the language of Section 1606(b) (1) which provides that only major dental treatment "to the extent determined by a physician to be medically necessary" is to be included as a benefit under the law. According to the House report on the bill (H.Report No. 1799, 86th Cong., 2nd Sess., p. 134), this language is intended to exclude "routine dental services for conditions not seriously affecting a person's general health." However, the meaning of the quoted statement from the House report is not clear since Section 1606(b) (2) (j) specifically limits "major dental treatment" to conditions that have or may "seriously affect" a person's general health.

It is the opinion of the American Dental Association that the inclusion of these provisions in the bill indicates such ignorance of medical and dental science and practice that doubt is cast upon the content of the entire bill. It definitely is illustrative of what happens when health care or other technical legislation is drafted by persons having no knowledge of the subject and no attempt is made to obtain professional advice and assistance. The Association believes it should hardly be necessary to point out that by education, training and experience dentists are acknowledged to be better trained and equipped to diagnose and determine the seriousness of dental diseases than members of any other profession including medicine. In fact, doctors of medicine receive little, if any, training relating to dental diseases, and it is common and usual practice for them to refer patients to dentists when a dental disease is suspected. Moreover, certain dental diseases and conditions in aged persons may be acutely serious whereas the same disease in young persons may be regarded as of a more or less routine nature. Professionally speaking, however, it is difficult to conceive of a dental disease in an elderly person which would not have serious effect on his general health. In any event, a proposed federal statute such as H.R. 12580 need not contain such limitations. The state and local administrators, in cooperation and consultation with professional people who understand the problems, can best determine the medical, dental and other health needs of persons eligible for care. The medical care authorizations in the existing assistance statutes make no distinctions and carry no restrictions of the type referred to in H.R. 12580 and programs operated thereunder have not encountered difficulty in this regard; under those programs eligible persons having conditions or diseases requiring treatment receive it without particular regard to the anatomical location of such disease or condition.

It is also noted that under Section 1606(b) (2) (1) an aged person with a serious oral infection could not receive penicillin or other medication on the prescription of his dentist.

It is submitted that the restrictions referred to are unnecessary and unrealistic and should be deleted from the bill.

book reviews

EFFECTIVE DENTAL ASSISTING

By Loren H. Schwarzrock, D.D.S., and Shirley Pratt Schwarzrock. Second edition. 563 pages. Illustrated. Vocabulary, glossary and index. $8. Dubuque, Iowa, Wm. C. Brown Co., 1959.

It has been as fascinating, if not as informative, to read the many laudatory reviews currently appearing about this new product of the authors Schwarzrock as to study the book itself. In general they hew to the same line—the need is great, the book is comprehensive, you "can't afford to waste your time" training assistants, let the book do it. This reviewer has saltier views.

No self-respecting dentist should stop for a moment to consider not purchasing this book. Time's a wastin'. Get your copy and take it home to study. This book has so much that is timely and fine and well-presented that its faults are insignificant. There exists no dentist who cannot learn from it, nor any assistant who cannot understand enough of it to improve her ability.

In 1953 the authors published a *Training Manual for the Dental Assistant*. Much simpler and without the mass of commercially identified illustrations, which make the new volume seem like the illegitimate offspring of virtuous professionalism coerced by rapacious commercialism, the older manual is a needed training tool.

What every dentist needs is a special manual worded especially for his own staff according to his own methods of practice and the specific requirements of his office. A few dentists have developed such training manuals; a very few. The Schwarzrocks have put into this most comprehensive new volume almost everything a conscientious dentist would want in his own manual and, in the earlier ring-bound volume, demonstrated just how an individual office handbook should be arranged.

The reviewer, long identified with practice management study, considers these two volumes vital to modern practice and recommends that each reader of them supplement their pages with marginal notations, or even added sheets of instruction to adapt their message to his particular program.

J. C. Almy Harding

DIE ZAHN-, MUND- UND KIEFERHEILKUNDE: EIN HANDBUCH FÜR DIE ZAHNÄRZTLICHE PRAXIS (THERAPY OF THE TEETH, MOUTH AND JAWS: A MANUAL FOR THE DENTAL PRACTICE)

Edited by Karl Häupl, Wilhelm Meyer and Karl Schuchardt. Five volumes. 1,525 pages with 5,344 illustrations. Index. For sale in complete set only. DM. 650. München, Urban & Schwarzenberg, 1954-1960.

Issue 34-35, the last of this monumental work, contains parts of volume III (General and Specialized Surgery of the Mouth and the Jaws).

PROSTHETIC APPLIANCES TO BE USED AFTER RADIUM THERAPY IN THE MAXILLOFACIAL REGION • By Erwin Reichenbach. 6 pages with 20 illustrations.

This brief but comprehensive chapter on the use of prosthetic appliances after radium therapy in the maxillofacial region is the product of years of the author's experience and study. It manifests an uncommon intellectual curiosity and devotion to detail by separating facts from theories. The reproductions of the prosthetic appliances suggested demonstrate their effectiveness in many phases of post-irradiation damage and unusual disease conditions of the maxillofacial region. Most of the

diagnostic procedures are covered well as are the pathologic changes occurring after radium therapy.

DISEASES OF THE SALIVARY GLANDS • By Gerhard Steinhardt. 17 pages with 20 illustrations.

The author presents the modern concepts of the salivary glands, their functions and diseases. To accomplish this objective in 17 pages, he has had to limit many important subjects to brief paragraphs, but there are few significant omissions. The illustrations are excellent, and the roentgenograms are fair to good. The bibliography, however, is limited. The material is well selected and recent advances in treatment are stressed.

SPECIFIC INFECTIONS IN THE MAXILLOFACIAL REGION • By Karl Schuchardt. 30 pages with 10 illustrations (7 in color).

This chapter emphasizes the diagnosis and treatment of specific infections (actinomycosis, anthrax, tetanus), in the maxillofacial region, and the necessity of making diagnosis and prognosis on an etiologic and not a symptomatologic basis. An attempt is made to present the most recently developed antibiotic agents used in the treatment of these diseases. But, as with other similar projects, at the time publication takes place, rapid advances in pharmacology and therapy have occurred, so that experience applicable a few months ago appears already as outdated. The well written text can be recommended to dental practitioners and students. The illustrations, most of them in color, are appropriate and clearcut. An outstanding feature is the reference to the pertaining dental and medical literature. Although it is impossible for any author to keep abreast of the rapid advances in antibacterial therapy, no serious mistake will be made if the recommendations of the author are followed.

PLASTIC SURGERY IN THE MAXILLOFACIAL REGION • By Karl Schuchardt. 61 pages with 174 illustrations.

This is one of the first reports on modern German plastic surgery in the maxillofacial region. A simple straightforward account of each subject has successfully eliminated the often encountered cumbersome erudition which frequently characterizes German presentation of oral surgical or plastic surgical methods. In spite of the comparatively brief demonstration of methods and technics, the arrangement of contents appears to be encyclopedic. There is an absence of the usual "dead wood" and little use of vague eponymic terminology. Although some of the operative procedures may appear strange to American readers, the report is invaluable for every oral surgeon who attempts this specific type of work.

COMPLETE DENTURES • By Hermann Böttger and Karl Häupl. 260 pages with 196 illustrations.

Viewed from the standpoint of present day American prosthodontics, the somewhat miscellaneous collection of prosthetic technics obviously still used in German dental practice appears to be of limited interest. Several of the methods recommended are obsolete, and important new technics are omitted. Generally speaking, the level at which the entire subject is presented seems not to be comparable to that of present-day presentations of American authors. Additionally, some of the terms used are at variance with the internationally accepted terminology. The bibliography also appears to be too limited, and there are many unfortunate omissions of significant contributions.

With this issue, the publication of this important German work on the therapy of the teeth, mouth and jaws is completed. With a few exceptions, the work appears to be an excellent textbook, and every American dentist who can read German will enjoy its many commendable features and its authoritative source material. Although the work can be considered only as a textbook on dentistry as practiced in Europe (especially in the German-speaking countries) it has a definite place in the libraries of dental schools and organizations, even if it will often be necessary to reread some of the sentences or entire chapters, because most of the authors preferred to use the difficult scientific phraseology which, unfortunately, is customary in textbooks published in Germany. *Paul H. Glucksman*

THE MEDICAL SECRETARY IN A MEDICAL, HOSPITAL OR DENTAL OFFICE

By Kenneth B. Coffin and R. Forrest Colwell. 391 pages with illustrations. Index. $5.95. New York, Macmillan Co., 1959.

This book, written for three groups—the student, the secretary and the medical assistant—is divided into three major sections: the secretary in a medical office, the secretary in a general hospital and the secretary in a dental office.

Each section explains thoroughly the duties encountered each day: business details; meeting patients; telephone technics; processing insur-

ance claims, and so forth. Included are illustrations of forms for billing patients; overdue accounts; case histories and also various types of letters sent out by physicians and dentists that readily can be adapted to particular cases. Each section also has lists of medical terms and their meanings.

Four appendixes contain much information on the principles of medical ethics; surgical histories; glossaries of common symptoms and diseases; common laboratory tests and examinations; eponyms; surgical instruments; lay terms and medical equivalents; medical abbreviations, and the preparation of manuscripts.

The Medical Secretary, a concise, well-written, information-packed textbook, could be used for classroom instruction, brush-up courses at home, or for quick reference in a busy office. *Viola I. Nelson*

CLINICAL PRACTICE OF THE DENTAL HYGIENIST

By Esther M. Wilkins and Patricia A. McCullough. 464 pages with 57 illustrations. $9.50. Philadelphia, Lea & Febiger, 1959.

For the first time a book has been designed for and devoted exclusively to the clinical practice of dental hygiene. This comprehensive and practical outline of all phases of dental hygiene care will be of particuar value to dental hygiene educators, students, practicing hygienists, and dentists who employ dental hygienists.

The authors have given specific attention to the dental hygiene appointment with its full educational import. Included is a complete description of such clinical procedures as scaling, polishing, topical application of sodium fluoride and charting.

Over 100 pages of the book are devoted to methods of adapting basic dental hygiene technics for patients with special needs. Attention is given to special oral problems which accompany physical and mental handicaps, chronic illnesses, puberty, pregnancy, and menopause.

This book was pretested carefully and revised before being printed in its present form. Much of the book is printed in outline with easy-to-read type and bold-faced headings, making it a quick and ready reference.

A 12-page glossary of terms is included as well as a comprehensive list of references.

The book would be excellent to use as a basic textbook in dental hygiene, or as a readily available reference for students. It would be a valuable addition to any professional person's library. *Belle Fiedler*

AN INTRODUCTION TO SURGERY FOR DENTAL STUDENTS

By R. P. Jepson and B. N. Catchpole. 166 pages with 53 illustrations. Index. $5. Springfield, Ill., Charles C Thomas, 1959.

This book deals more with pathology than with surgery or surgery technics. The material is presented in a very general manner and is worth more as a reference for diagnosis than as a teaching text in surgery for dental students. The expressions used and proprietary names of drugs are foreign to American readers and in many instances the drugs named are not listed in the reference books available to our readers.

The chapters on wounds and healing, hemorrhage, inflammation and burns are presented well but offer little to our dental students. The academic courses in dental colleges in America today far exceed the scope of this material.

The chapter on neoplasms is very brief and general and those on diseases of the salivary gland and on superficial lesions of the head and neck do not discuss surgery and have little information of interest to a dentist.

The chapters entitled "Facio-Mandibular Injuries" and "Head Injuries" are contained in six pages; they are accurate, but are completely inadequate for today's dental student. Diseases of the temporomandibular joint are discussed in six pages. The material is inadequate and controversial.

A chapter, "Swellings of Coverings of the Jaw," is not at all in keeping with our accepted terminology, description and interpretation. The chapter entitled "Diseases of the Nose, Larynx and Oesophagus" is very original and of absolutely no value or interest to the dentist or dental student.

Several chapters contain no discussion of surgery; they pertain to pathology and diagnosis and are not relative to the interests of dental students. As an example: on page 152 the author states: "Birth injury to the sternomastoid muscle results in sternomastoid 'tumour.' This localized fusiform swelling in the muscle is situated at its lower third and is slightly tender. When diagnosed soon after birth exercises are prescribed to prevent a torticollis from shortening all the muscles. If the diagnosis is delayed the child is seen for the first time at the age of six months to two years with the head tilted and rotated to one side. Repeated stretching with or without division of the muscle will cure this condition."

The text contains additional similar discussions which have no value to a dental student.

Morgan L. Allison

LA METHODE FONCTIONNELLE EN ORTHOPEDIE DENTO-FACIALE

By Fred Blau. Preface by P. L. Moromeaud. 269 pages. Illustrated. Paris, France, Julien Prelat, 1959.

This book, which presents the theory of functional orthopedics of the jaw in the light of modern practice and knowledge, is surely the best book ever published on this subject.

The first chapter is devoted to the histophysiology of the osseous tissue and the periodontium. In the second, the author explains the different theories concerning the action of the Monobloc, which is the appliance of his choice for the treatment of young children.

The Monobloc was invented by the French dentist, Robin, in 1902, and modified later by Andreson. It consists of a plate with flanges covering the inner surfaces of the mandibular teeth and alveolar mucosa. This plate, which is loose in the mouth, produces changes in the tissues in which the teeth are lodged and therefore is not effective when at rest but when moving. The loose plate causes the mandible to change position in the joint and produces a corresponding alteration in the functional stimuli acting on the point. The change in position of the mandible is accompanied by a change in position of the condyle equivalent to a spatial change in the point. This factor is important for the formation of tissue because tissue formation depends on the type of stimuli and tissue reaction and on the spatial relationship.

The third and fourth chapters deal with the construction of gutta-percha and wooden pegs, the screws, the guiding wires and loops.

The fifth chapter is devoted to the explanation of practical cases according to Angle classification. The author begins with treatment of simple cases of Class I, and progresses to the more complicated cases of Class II and III.

The last part of the book deals with the limits of functional therapy, the best time for purely functional treatment, and the necessity of having the full cooperation of parents and children when using the Monobloc method.

Published in French, this book will prove useful to those not acquainted with this language because of the 500 excellent illustrations which explain by themselves the technic used by the author in the construction and manipulation of the Monobloc. *Paul Geoffrion*

COMPLETE DENTURES

By Merrill G. Swenson, D.D.S., with the collaboration of Charles J. Stout, D.M.D. 682 pages with 856 illustrations including 10 in color. Index. $13.50. St. Louis, C. V. Mosby Co., 1959.

The fact that Dr. Swenson's book is in its fourth edition is evidence of its wide acceptance by the dental profession. This edition has been so radically changed from its predecessors, that it is in effect a totally new book. The type is very legible and many improvements in arrangement are apparent. The text is divided into five parts, fully explaining not only the scientific fundamentals of anatomy, histology, and physiology, but also a technic to use clinically these basic facts in an acceptable method of denture construction.

The advent of new materials and new thoughts, especially in physiology, has had a great impact on the technic of denture construction. Dr. Swenson, cognizant of this fact, has incorporated many of these new concepts in his book. His description of centric relation, for instance, is most explanatory of the difficulties which can be encountered in this most important step of denture construction. His impartiality in relation to the various concepts is apparent and his conclusions will guide the reader to a better understanding of this problem.

All the various steps of clinical applications are profusely illustrated, the arrangement of which is superior to that found in the previous editions. Commercial illustrations are at a minimum but it is regretted that the author found it necessary to name any commercial product.

The effects of nutrition on edentulous mouths, the construction of immediate dentures, simplified methods of repairs and rebasing, cast chrome bases and the fabrication of single dentures, are explained most adequately. The nomenclature has been based on the "Glossary of Prosthodontic Terms" which is reprinted in full. The bibliography has been brought up to date and is most extensive.

The fourth edition of Dr. Swenson's book is highly recommended to all students and practitioners as a text which incorporates most of the latest thoughts and clinical concepts of the construction of complete dentures.

L. E. Kurth

current literature

SILICONE IMPRESSION MATERIALS: EXPERIENCE IN DENTAL PRACTICE

R. Zöllich. Zahnärztl.Welt. & Reform 60:369 June 25, 1959.

The silicone impression materials have been available to dental practice for over three years, and are becoming increasingly popular for impression taking in restorative dentistry.

These rubbery materials, sometimes called silicone rubber materials, contain no organic or conventional rubber, but they can hardly be distinguished from customary rubber by casual inspection. They usually are prepared by milling an inorganic fiber into a viscous silicone polymer to which a catalyst (benzoyl peroxide) is added. These materials are extremely elastic, comparatively stable, and produce clinically accurate and detailed impressions of the hard and soft tissues of the oral cavity.

Silicone impression materials have an esthetic coloring, are easy to mix, and do not stain clothing; normal variations in room temperature do not change significantly the setting time. They have a low toxicity, which is imperative for any material introduced into the mouth, and are virtually tasteless and odorless.

When the dentist has mastered the technic for the use of silicone impression materials which is similar to that of impression taking with other elastic compounds, he will find that he is working with an extremely versatile material that compares favorably with the materials used previously. These materials give the dentist a certain amount of freedom of action.

Although the accuracy of some of the silicone impression materials could be improved by a longer curing time, ten minutes appear to be an adequate time for the silicone materials at present available.

A uniformly thin (about 2 mm.) layer of silicone material produces more accurate results than a thicker or unevenly distributed layer. Accuracy may be improved by permitting the impression material to become increasingly elastic before seating of the tray.

With the different brands of silicone materials, there is a great diffrence in rate and degree of distortion after storage of the impression. Because of these defects, the results are often inconsistent. It remains for the individual dentist to select the commercial brand of silicone impression material best suited to his own requirements and technics, and to reduce the degree of error in the laboratory work.

DENTAL FEES IN VENEZUELA

By F. H. Lepp. Zahnärztl.Mitt. 46:910 Aug. 1, 1959.

During the past decades, members of the dental profession in Latin America have been subjected to competition with unorganized dentists whose fees for the various dental services are very low. Although most dentists are aware that there cannot be a workable schedule for standardized dental fees, they requested from the *Colegio de Odontólogos de Venezuela,* the country's dental association, a specification of minimum dental fees. The association responded by publishing a schedule of minimum dental fees in 1956 which is still in force and is posted in almost every dental office.

Converted into United States dollars, some of the suggested fees are as follows: consultation, $1.18; oral examination and diagnosis, $3.52; extraction per tooth, $1.80; local anesthesia, including injection, $1.36; general anesthesia, including injection, $1.60; amalgam filling, one surface cavity, $3.00; porcelain or acrylic filling, one surface cavity, $4.00; removal of calculus, $4.80; single dental roentgenogram, $.80; acrylic or gold crown, $12.00;

complete denture, $32.00; partial denture, $19.20; pulpectomy and root canal treatment, $9.64, and alveolectomy per quadrant, $3.40.

Venezuela was the only country in the western hemisphere which suffered no devaluation of its currency, the bolivar. Because the petroleum industry spends much more in this country than it takes out, the economy appears to be in a more favorable condition than in the other Latin American countries. The general public, therefore, can afford to pay dental fees which correspond more accurately to the living standards than the fees suggested by the association.

IDENTIFICATION BY TEETH: A POSSIBLE SOURCE OF ERROR

By F. R. Shroff. Brit.D.J. 107:178 Oct. 6, 1959.

Among the key questions to be answered in any identification procedure is that of the age of the person. Under certain circumstances, the developmental age may differ from the chronological age. The case reported is an example of such an instance, and demonstrates how roentgenographic examination of a jaw may be a useful adjunct in the assessment of age.

In June 1958 a disastrous fire swept through a home for mentally handicapped children, one of the inmates perishing. Although the identity of this person could be established reasonably well by other means, a postmortem was ordered. The author was asked to examine and report on the dental condition of the mandible.

Both permanent lower second molars had erupted through the bone but were still in their follicles and covered by mucosa, so that clinical eruption had not taken place. The lower right second bicuspid had only just emerged through the bone, whereas the left first bicuspid was in occlusion. Leslie (1951) gives the average age of eruption of the second permanent molars in girls as between 10.07 and 13.56 years, of the first permanent bicuspids between 9.02 and 12.42 years, and of the permanent cuspids between 8.59 and 12.37 years. From these figures, this jaw would appear, at first sight, to have a developmental age of not more than 13 years and probably less. Roentgenographic examination, however, revealed that the roots of all the permanent teeth, including the second molars, had developed almost to completion, those of the unerupted bicuspids being slightly less complete than the others. As it is unusual for root formation to reach completion before the teeth have come into functional occlusion, and even before eruption, this evidence indicated that the girl may have suffered some form of disturbance of growth processes, and that the chronological age was probably somewhat older than the age indicated by clinical examination. It was known that this girl was affected with mongolian idiocy; such persons generally suffer from both mental and physical retardation. In this instance, it was known that the victim's age was 16 years.

The case illustrates the necessity in other similar circumstances, where there is no prior knowledge of age, identity or pattern of growth, of taking into account not only the results of clinical examination but those of roentgenographic and other methods of examinations. Only by collecting all the available evidence and correlating it can mistakes be avoided.

ROENTGEN RAYS, A HAZARD TO THE EYES OF PHYSICIANS, DENTISTS AND PATIENTS?

German M.Monthly 4:211 June 1959.

Q.—What is known about roentgen-ray damage to the eyes of physicians, dentists and patients, and about adequate protection and treatment?

A.—Only direct radiation will damage the eyes; radiation exposure in medical or dental offices, especially when diagnostic dosages are used, is harmless to the organ of vision. Direct radiation to unprotected eyes may cause damage to cornea, lens and the lacrimal glands. A dosage of 200 r directly applied to the lens may be sufficient to produce radiation cataract, although usually a dosage of 600 r or more is required before this condition is established. Radiation cataract, a type of traumatic cataract, especially at its onset, presents certain characteristic morphological features and can, thereby, be distinguished from senile and presenile cataracts. Among the structures of the eye, the retina, the optic nerve and the vitreous humor appear to be extremely resistant to roentgen-ray damage. For this reason it appears unlikely that there exists any relation between direct or indirect irradiation at the medical or dental office and the appearance of a temporary or permanent change in the optic disk or in opacity of the vitreous humor. The exposure of the eyes of physicians, dentists and patients to direct radiation can be kept within permissible exposure levels by using safety measures, and these safety measures will obtain the desired protection.

deaths

BUREAU OF MEMBERSHIP RECORDS

Alport, David E., Kansas City, Mo.; Kansas City-Western Dental College, 1927; died January 21; age 54.

Baker, William J., Paso Robles, Calif.; died March 25; age 90.

Bardwell, Augustine R., Palo Alto, Calif.; died March 16; age 77.

Belton, Waddie L., Philadelphia; Temple University School of Dentistry, 1925; died February 9; age 65.

Bowles, Boyd F., Wollaston, Mass.; Tufts College Dental School, 1903; died April 2; age 86.

Brand, Alex A., Thomson, Ill.; Vanderbilt University School of Dentistry, 1897; died March 7; age 87.

Brockway, A. M., Libby, Mont.; Chicago College of Dental Surgery, 1910; died February 27; age 75.

Busby, Allison, Oxford, Miss.; University of Tennessee College of Dentistry, 1919; died March 1; age 61.

Butler, William J., Naugatuck, Conn.; Georgetown University School of Dentistry, 1917; died March 11; age 67.

Cahill, John F., Waseca, Minn.; University of Minnesota School of Dentistry, 1909; died March 6; age 71.

Campbell, William E., Hartford, Conn.; died March 7.

Camras, Harry R., Beverly Hills, Calif.; Loyola University School of Dentistry, Chicago College of Dental Surgery, 1927; died April 5; age 55.

Centrello, Romeo R., Youngstown, Ohio; University of Louisville School of Dentistry, 1932; died February 13; age 56.

Chamberlain, Fred W., Colorado Springs, Colo.; died March 3; age 87.

Chambers, Laura K., Springfield, Mo.; University of Illinois College of Dentistry, 1919; died January 6; age 86.

Chisholm, Lester D., Everett, Mass.; Tufts College Dental School, 1904; died March 22; age 78.

Collis, Keith L., Lohrville, Iowa; University of Iowa College of Dentistry, 1924; died March 16; age 59.

Cottrell, Harvey V., Worthington, Ohio; Ohio Medical University College of Dentistry, 1900; died March 28; age 91.

Cox, James E., Celina, Tenn.; University of Tennessee College of Dentistry, 1957; died March 21; age 29.

Craig, Harry R., Pittsburgh; Pittsburgh Dental College Western University of Pennsylvania, 1905; died December 10; age 79.

Dantone, Joseph D., Hammond, La.; Loyola University School of Dentistry, New Orleans, 1929; died February 7; age 53.

Davenport, Robert L., St. Louis; St. Louis University School of Dentistry, 1939; died March 8; age 45.

Davey, Harvey O., Monson, Mass.; Harvard Dental School, 1923; died March 8; age 69.

Davis, John W., Houston, Texas; Northwestern University Dental School, 1925; died March 3; age 57.

Dern, Carroll D., Taneytown, Md.; Baltimore College of Dental Surgery, University of Maryland; died March 5; age 55.

Dowling, Frank E., Western Springs, Ill.; Northwestern University Dental School, 1925; died March 13; age 66.

Dutro, John T., Williamsburg, Va.; Ohio State University College of Dentistry, 1923; died February 28; age 63.

Earle, Oscar W., Berry, Ky.; Ohio College of Dental Surgery, University of Cincinnati, 1916; died January 25; age 67.

Early, Frank S., Scott AFB, Ill.; Kansas City-Western Dental College, 1934; died March 13; age 49.

Erbey, William F., Coraopolis, Pa.; Pittsburgh Dental College Western University of Pennsylvania, 1898; died December 21; age 86.

Esslie, Warren B., Cleveland; Indiana Dental College, 1911; died March 18; age 79.

Estabrook, Philip D., Boston; Temple University School of Dentistry, 1911; died October 7; age 71.

Fendler, Sylvester E., St. Louis; Washington University School of Dentistry, 1919; died January 13; age 62.

Fergason, James T., South Pittsburg, Tenn.; University of Tennessee College of Dentistry, 1894; died March 24; age 87.

Forbes, Joseph, Pontiac, Mich.; University of Toronto Faculty of Dentistry, 1922; died March 24; age 61.

Forestner, Edward F., St. Petersburg, Fla.; University of Pennsylvania School of Dentistry, 1906; died March 23; age 78.

Foster, Arthur C., Chester, N. J.; Ohio College of Dental Surgery, University of Cincinnati, 1914; died March 27; age 75.

Fortune, William G., River Ralls, Wis.; Chicago College of Dental Surgery, 1900; died January 5; age 86.

Foti, Frank L., Elizabeth, N. J.; St. Louis University School of Dentistry, 1958; died April 9; age 31.

Geiger, Charles H., Vevay, Ind.; Ohio College of Dental Surgery, University of Cincinnati, 1891; died February 27; age 99.

Ginther, Harry E., Winamac, Ind.; Indiana Dental College, 1913; died February 19; age 68.

Gold, Barnett L., Chicago; Baltimore Medical College, Dental Department, 1906; died March 24; age 82.

Goldman, Michael, Boston; died August 31; age 64.

Goldsmith, William E., Allston, Mass.; Tufts College Dental School, 1918; died March 1; age 62.

Gorman, Frank A., Saginaw, Mich.; University of Michigan School of Dentistry, 1920; died March 5; age 63.

Grimes, Henry A., Mobile, Ala.; Atlanta Dental College, 1913; died March 30; age 72.

Haffner, Louis A., Lawrence, Mass.; Tufts College Dental School, 1910; died April 7; age 71.

Hand, Francis H., Madison, Wis.; Marquette University School of Dentistry, 1921; died March 15; age 60.

Harris, Irving H., Westfield, N. J.; University of Pennsylvania School of Dentistry, 1919; died March 8; age 65.

Hartley, Charles G., Los Angeles; Northwestern University Dental School, 1905; died March 13; age 76.

Harverkamp, Harold H., Puyallup, Wash.; North Pacific College of Oregon School of Dentistry, 1923; died March 9; age 69.

Hawley, Stephen S., Orlando, Fla.; New York College of Dentistry, 1884; died March 18; age 101.

Heinrich, Edwin H., Mayville, Wis.; Marquette University School of Dentistry, 1914; died March 14; age 70.

House, John F., Dallas, Texas; Baylor University College of Dentistry, 1929; died March 14; age 57.

Jetter, Charles V., Indianapolis; Indiana University School of Dentistry, 1929; died March 3; age 52.

Kaufman, Victor R., Richland, Mich.; University of Michigan School of Dentistry, 1920; died August 30; age 64.

Keagy, William O., Metairie, La.; Loyola University School of Dentistry, New Orleans, 1929; died February 15; age 56.

Keeney, Bert L., Princeton, Ky.; University of Louisville School of Dentistry, 1923; died March 14; age 67.

Kemp, Warren C., Fairfield, Iowa; University of Iowa College of Dentistry, 1931; died March 30; age 55.

Kilborn, Grant R., Wichita, Kan.; Kansas City-Western Dental College, 1927; died March 3; age 60.

Kitchens, Dillon S., Warrenton, Ga.; Southern Dental College, 1912; died February 7; age 79.

Klar, John J., Arcanum, Ohio; Ohio State University College of Dentistry, 1919; died March 29; age 68.

Knower, Meyer D., New York; College of Dental and Oral Surgery, 1917; died March 18; age 66.

Ladd, James R., Pontiac, Mich; University of Michigan School of Dentistry, 1923; died March 22; age 58.

Lambert, Carlton G., Bowling Green, Ky.; University of Louisville School of Dentistry, 1945; died March 15; age 44.

Laymon, Francis G., Lincoln, Neb.; University of Nebraska College of Dentistry, 1922; died March 20; age 59.

Levant, Howard, Pittsburgh; University of Pittsburgh School of Dentistry, 1925; died April 3; age 55.

Lipsky, Julius P., Chicago; Northwestern University Dental School, 1914; died March 29; age 73.

Loth, A. Milton, Newburgh, N. Y.; University of Pennsylvania School of Dentistry, 1943; died March 16; age 39.

Luciano, Angelo, Somerville, Mass.; Tufts College Dental School, 1916; died March 21; age 66.

Lutz, Richard J., Stamford, Conn.; New York University College of Dentistry, 1933; died March 26; age 50.

Malone, Raymond J., Portland, Maine; Harvard Dental School, 1919; died March 22; age 65.

Marcus, Matthew, Philadelphia; University of Pittsburgh School of Dentistry, 1919; died March 18; age 65.

Marshall, John A., Morrison, Ill.; Chicago College of Dental Surgery, 1918; died March 3; age 69.

Martin, J. Miles, Minneapolis; University of Minnesota School of Dentistry, 1923; died March 10; age 61.

Martyn, Donald, Detroit; Detroit College of Medicine, Department of Dental Surgery, 1908; died March 24; age 80.

Mense, Raymond C., Hannibal, Mo.; St. Louis University School of Dentistry, 1911; died March 24; age 69.

Meyer, Frederick J., Waukesha, Wis.; Northwestern University Dental School, 1894; died January 11; age 91.

Miller, Arthur L., Cheyenne, Wyo.; Kansas City-Western Dental College, 1928; died March 21; age 53.

Mills, Morton, Saranac Lake, N. Y.; University of Pennsylvania School of Dentistry, 1891; died March 30; age 93.

Mitchell, Joseph S., Springfield, Mass.; University of Maryland, Dental Department, 1914; died March 15; age 68.

Montgomery, Paul R., Akron, Ohio; University of Pittsburgh School of Dentistry, 1919; died January 17; age 65.

Morrone, Joseph J., Keewatin, Minn.; University of Minnesota School of Dentistry, 1939; died February 11, age 50.

Mullen, Charles, Otsego, Mich.; Northwestern University Dental School, 1900; died February 26; age 83.

Murray, John E., Somerville, Mass.; Tufts College Dental School, 1923; died April 1; age 64.

Nespor, Elmer J., Arcadia, Calif.; Creighton University College of Dentistry, 1950; died April 2; age 39.

Norton, Thomas K., Arlington, Mass.; Tufts College Dental School, 1918; died March 28; age 69.

Noville, Frank, Cleveland Heights, Ohio; Philadelphia Dental College, 1890; died March 29; age 90.

O'Neil, John J., Denver; University of Denver School of Dentistry, 1902; died March 29; age 80.

Parlin, Albert, Chicago; Northwestern University Dental School, 1915; died March 9; age 70.

Patterson, Earl M., Akron, Ohio; Northwestern University Dental School, 1919; died March 27; age 66.

Pero, Albert E., Worcester, Mass.; died April 1; age 84.

Perry, Alfred E., Albany, N. Y.; University of Pennsylvania School of Dentistry, 1923; died March 27.

Philippbar, Joseph W., Pittsburgh; University of Pittsburgh School of Dentistry, 1913; died March 9; age 71.

Planck, Harry B., Los Angeles; University of Southern California School of Dentistry, 1924; died March 18; age 65.

Pollock, Howard J., Ames, Iowa; University of Iowa College of Dentistry, 1932; died March 6; age 56.

Price, Homer A., Parkersburg, W. Va.; Ohio College of Dental Surgery, University of Cincinnati, 1915; died March 3; age 75.

Ralston, Thomas A., Southington, Conn.; University of Maryland, Dental Department, 1902; died April 5; age 87.

Riden, Joseph R., Littlestown, Pa.; Temple University School of Dentistry, 1914; died February 9; age 68.

Riemenschneider, LaVerne, Chelsea, Mich.; Ohio Medical University College of Dentistry, 1906; died March 15; age 81.

Rodgers, Robert C., McMinnville, Tenn.; University of Tennessee College of Dentistry, 1954; died March 10; age 32.

Rosenbaum, A. Hall, Miami Beach, Fla.; New York College of Dentistry, 1906; died December 28; age 73.

Rosenberg, David K., New York; Columbia University School of Dental and Oral Surgery, 1925; died March 25; age 56.

Ryan, Frank A., Dighton, Kan.; Kansas City Dental College, 1919; died February 20; age 65.

Sachter, Henry G., New York; College of Dental and Oral Surgery, 1907; died January 25; age 95.

Schwartz, Adam C., Weirton, W. Va.; Baltimore College of Dental Surgery, University of Maryland, 1907; died February 1; age 79.

Schwartz, Albert M., South Orange, N. J.; University of Pennsylvania School of Dentistry, 1924; died March 1; age 57.

Searing, Ellis R., Lockport, N. Y.; University of Buffalo School of Dentistry, 1916; died December 3; age 72.

Seismann, Charles H. A., Mineola, N. Y.; Tufts College Dental School, 1927; died January 23; age 56.

Shanahan, James F., Bayonne, N. J.; Baltimore College of Dental Surgery, University of Maryland, 1934; died February 4; age 52.

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One-Hundred and First Annual Session	October 17-20, 1960	Los Angeles
One-Hundred and Second Annual Session	October 16-19, 1961	Philadelphia
One-Hundred and Third Annual Session	October 29-November 1, 1962	Miami Beach, Fla.
One-Hundred and Fourth Annual Session	October 14-17, 1963	Atlantic City, N.J.
One-Hundred and Fifth Annual Session	November 9-12, 1964	San Francisco

MEETINGS OF CONSTITUENT SOCIETIES

State	*Date*	*Place*	*Secretary and Address*
Alabama	Apr. 24-26	Mobile	C. R. Crook, Professional Center, Montgomery
Alaska	July 10-12	Anchorage	W. E. Alexander, 406 G St., Anchorage
Arizona	Apr. 12-15	Phoenix	J. F. Vaughn, 2727 N. Central Ave., Phoenix
Arkansas	Apr. 9-12	Little Rock	D. M. Hamm, Box 89, Clarksville
California	Apr. 16-19	San Francisco	W. J. Healy, 518 Sutter St., San Francisco 8
S. California	Apr. 24-26	Los Angeles	J. H. Thomason, 903 Crenshaw Blvd., Los Angeles 19
Colorado	Oct. 2-5	Colorado Springs	G. H. Siersma, 724 Republic Bldg., Denver 2
Connecticut	May 10, 11	Hartford	E. S. Arnold, 37 Linnard Rd., W. Hartford
Delaware	June 9, 10	Wilmington	W. W. Flanagan, Jr., 309 S. State, Dover
Dist. of Columbia	Mar. 12-15	Washington	B. D. Mattox, 1835 Eye St., N.W., Washington 6
Florida	May 21-24	Miami Beach	E. M. Farber, 518 Tampa St., Tampa
Georgia	Oct. 2-5	Savannah	F. M. Butler, Jr., 701 Southern United Bldg., Macon
Hawaii	Oct. 24-27	Honolulu	J. H. Dawe, 291 Alexander Young Bldg., Honolulu 13
Idaho	Sept. 15-17	Sun Valley	H. E. Burgess, 151 Fourth Ave., N., Twin Falls
Illinois	May 8-10	Peoria	P. W. Clopper, 632 Jefferson Bldg., Peoria
Indiana	May 14-17	Indianapolis	C. L. Howell, 1012 Hume Mansur Bldg., Indianapolis 4
Iowa	May 1-3	Des Moines	H. N. Hake, 639 Insurance Exchange Bldg., Des Moines 9
Kansas	May 7-9	Kansas City	F. A. Richmond, Brotherhood Bldg., Kansas City 1
Kentucky	Apr. 9-12	Louisville	A. B. Coxwell, Jr., 2208 Dundee Rd., Louisville 5
Louisiana	May 5-7	Lafayette	J. S. Bernhard, 231 Atkins Ave., Shreveport 26
Maine	June 15-17	Rockland	S. M. Gower, 6 Coburn Ave., Skowhegan
Maryland			W. Schunick, 19 Medical Arts Bldg., Baltimore 1
Massachusetts	Apr. 30-May 3	Boston	H. E. Tingley, 227 Commonwealth Ave., Boston
Michigan	Apr. 10-12	Detroit	F. Wertheimer, Michigan Dept. of Health, Lansing
Minnesota	Apr. 17-19	Minneapolis	C. V. E. Cassel, 2236 Marshall Ave., St. Paul 4W

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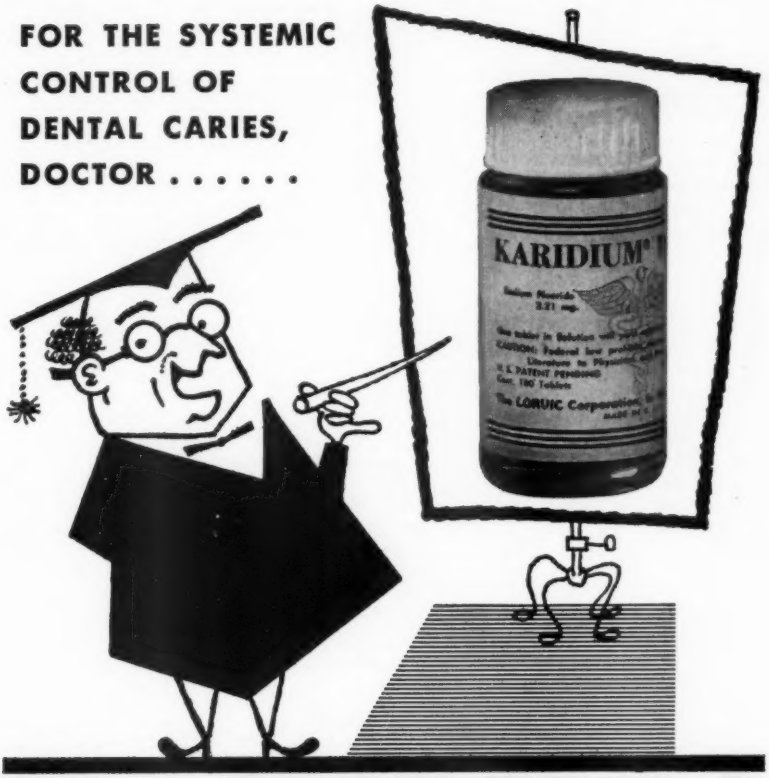

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Missouri	May 7-10	Kansas City	E. D. Suggett, Merchants Bank Bldg., Jefferson City
Montana	May 4-6	Great Falls	R. C. Ritter, 1236 N. 28th St., Billings
Nebraska	Apr. 24-26	Lincoln	F. A. Pierson, Federal Securities Bldg., Lincoln
Nevada	May	Las Vegas	O. M. Seifert, 821 Ryland Ave., Reno
New Hampshire	June 18-20	Whitefield	F. E. Williams, 517 Manchester St., Manchester
New Jersey	May 14-17	Atlantic City	J. G. Carr, 407 Cooper St., Camden
New Mexico	May 10-13	Albuquerque	E. P. Purtell, 2917 Santa Cruz Ave., S.E., Albuquerque
New York	May 15-17	Syracuse	C. A. Wilkie, 268 Ashland Pl., Brooklyn 17
North Carolina	May 14-17	Pinehurst	S. B. Towler, P.O. Box 11065, Raleigh
North Dakota	Sept. 11-13	Williston	D. R. Perry, Box 866, Bismarck
Ohio	Nov. 13-16	Columbus	E. G. Jones, 185 E. State St., Columbus
Oklahoma	Apr. 23-26	Tulsa	W. C. Hopkins, 210 Plaza Court Bldg., Oklahoma City
Oregon	Mar. 6-8	Portland	T. D. Holder, Selling Bldg., Portland
Panama C. Z.			H. L. Mertz, Jr., Tech Svc Pac Med, Fort Clayton
Pennsylvania	May 18, 19	Hershey	I. Sissman, 217 State St., Harrisburg
Puerto Rico	Jan. 22-25	San Juan	R. Gonzalez R., Box 10452, Caparra Heights
Rhode Island	Jan. 17, 18	Providence	E. M. Nelson, 901 Union Trust Bldg., Providence
South Carolina	May 14-16	Columbia	J. E. Wallace, 1506 Gregg St., Columbia
South Dakota	May 14-16	Aberdeen	R. E. Decker, 2909 Poplar Dr., Sioux Falls
Tennessee	May 14-18	Gatlinburg	K. P. Ezell, 119 Louise Ave., Nashville 5
Texas	Apr. 30-May 3	Houston	C. A. McMurray, 3707 Gaston Ave., Dallas 10
Utah	May 18-20	Salt Lake City	R. C. Dalgleish, 1554 Princeton Ave., Salt Lake City
Vermont	June 22-24	Vergennes	E. C. Woods, 128 Merchants Row, Rutland
Virginia	Apr. 30-May 3	Roanoke	M. E. Henderson, Shenandoah Bldg., Roanoke 11
Washington			D. R. Shaw, 417 Grosvenor House, 500 Wall St., Seattle 1
West Virginia	July 16-19	White Sulphur Springs	P. H. Loflin, 109 E. Main St., Beckley
Wisconsin	Apr. 24-26	Milwaukee	C. J. Baumann, Jr., 704 W. Wisconsin Ave., Milwaukee
Wyoming	June 15-17	Laramie	T. J. Drew, State Office Bldg., Cheyenne

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Arizona			W. G. Biddulph, 1611 N. Second Ave., Glendale
Arkansas	June 18-23*†	Little Rock	G. Cone, 113 S. Pecan St., Osceola
California			T. R. Flinn, 1021 O St., Rm. A-597, Sacramento 14
Colorado			B. DeRose, Republic Bldg., Denver 2
Connecticut			M. J. Zazzaro, 99 Pratt St., Hartford 3
Delaware			J. F. Maguire, 1200 N. Van Buren St., Wilmington
Dist. of Columbia	Jan. 9-13*†	Washington	J. A. Madden, 1740 Massachusetts Ave., N.W., Washington 11
Florida			R. P. Taylor, Jr., P.O. Box 2913, Jacksonville 3
Georgia	May 29-31	Atlanta	H. M. Robertson, 206 Donehoo St., Statesboro
Hawaii	Sept. 1-4‡		F. S. Kagihara, 1644 S. King St., Honolulu
Idaho			W. M. Smith, 305 Fort St., Boise
Illinois			R. I. Humphrey, 185 N. Wabash Ave., Chicago

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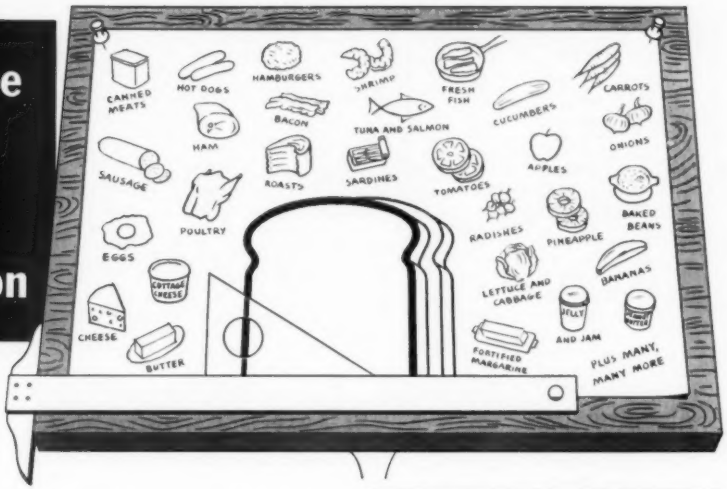

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Thiamine	0.43 Mg.	1.2 Mg.	36%
Riboflavin	0.24 Mg.	1.5 Mg.	16%
Niacin	2.55 Mg.	17 Mg.	15%
Food Energy	363 Cal.	2,300 Cal.	16%

*Based on tables in the Yearbook of Agriculture 1959, U.S.D.A., Washington, D.C.

†Daily dietary allowances for 25 year old woman.

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State	*Date*	*Place*	*Secretary and Address*
Indiana	Dec. 5-8*†	Indianapolis	C. A. Frech, Gary National Bank Bldg., Gary
Iowa	June 5-8*†	Iowa City	P. A. Hahn, Farmers & Merchants Bank Bldg., Burlington
Kansas	Jan. 23-25*†‡		R. C. Windscheffel, Medical Arts Bldg., Smith Center
Kentucky			J. J. Kelly, 102 W. Madison St., Franklin
Louisiana			A. R. deNux, 617 N. Monroe St., Marksville
Maine			A. H. Garcelon, 133 State St., Augusta
Maryland	Nov. 7-9	Baltimore	F. J. Bryce, 303 Granville Dr., Silver Spring
Massachusetts			M. E. Sullivan, 33 State House, Boston
Michigan	Jan. 22-28 June 11-17	Ann Arbor	J. L. Champagne, 3714 W. McNichols Rd., Detroit 21
Minnesota			E. A. Nelson, 2236 Marshall Ave., St. Paul 4W
Mississippi			A. H. Richter, Jr., Aven Bldg., Greenwood
Missouri	Sept. 29-Oct. 1* Sept. 29† Oct. 3, 4*†	St. Louis	R. R. Rhoades, Central Trust Bldg., Jefferson City
Montana			E. A. Cogley, Medical Arts Bldg., Great Falls
Nebraska			H. E. Weber, Stuart Bldg., Lincoln
Nevada			R. Whitehead, 40 W. First St., Reno
New Hampshire			L. U. Bergeron, 211 High St., Somersworth
New Jersey			C. J. Schweikhardt, 150 E. State St., Trenton
New Mexico			G. D. Hastain, Box 1007, Clovis
New York	Dec. 1, 2 Dec. 6-9	New York Buffalo New York Albany Syracuse Buffalo	D. F. Wallace, 23 S. Pearl St., Albany 7
North Carolina			J. H. Guion, Doctors Bldg., Charlotte 7
North Dakota			F. A. Maides, First National Bank Bldg., Grand Forks
Ohio			D. E. Bowers, 322 E. State St., Columbus 15
Oklahoma			W. H. Stephens, Plaza Court Bldg., Oklahoma City
Oregon	Dec. 5-7	Portland	C. Wheeler, Medical Arts Bldg., Portland
Pennsylvania	Dec. 1, 2* Dec. 1†	Philadelphia	P. Swanson, 8111 Jenkins Arcade, Pittsburgh
Puerto Rico			J. Mercado C., Comercio St., #452, San Juan
Rhode Island			A. E. Turcone, 298 Broadway, Providence
South Carolina			W. J. Brockington, 1508 Washington St., Columbia 1
South Dakota			H. T. Aker, Canton
Tennessee	Dec. 14-17	Memphis	C. R. Aita, Bennie-Dillon Bldg., Nashville
Texas	Sept. 28-Oct. 1*†	Houston	R. T. Weber, Capital National Bank Bldg., Austin 16
Utah			H. R. Nordberg, 143 S. Main St., Salt Lake City 1
Vermont			P. M. Fitch, Newport
Virginia	June 12-17* June 14, 15†	Richmond	J. M. Hughes, Medical Arts Bldg., Richmond
Washington			W. B. Lamey, Medical Dental Bldg., Everett
West Virginia	June 19-21* June 20, 21†	Morgantown	A. B. Drake, 1355 Fourth Ave., Huntington
Wisconsin	Jan. 9-11*†	Milwaukee	S. F. Donovan, Tomah
Wyoming			W. J. Ryan, Boyd Bldg., Cheyenne

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Name	*Date*	*Place*	*Secretary and Address*
American Board of Dental Public Health	Oct. 13, 14	Los Angeles	D. J. Galagan, Divn. of Dental Public Health, PHS, Dept. of Health, Education and Welfare, Washington, D.C.
American Board of Oral Pathology	Dec. 3, 4	Baltimore	D. A. Kerr, School of Dentistry, University of Michigan, Ann Arbor, Mich.
American Board of Oral Surgery	Dec. 5 Mar. 17-21	Chicago	L. M. FitzGerald, Roshek Bldg., Dubuque, Iowa
American Board of Orthodontics	Apr. 10-15	Denver	A. W. Moore, University of Washington, Schoo of Dentistry, Seattle 5
American Board of Pedodontics	Nov. 28-Dec. 1	New York	R. L. Ireland, College of Dentistry, University of Nebraska, Lincoln 8, Neb.
American Board of Periodontology	Apr. 10-12	Indianapolis	B. O. A. Thomas, 668 Homer Ave., Palo Alto, Calif.
American Board of Prosthodontics			C. H. Jamieson, David Whitney Bldg., Detroit 26
Council on Dental Education Dental Aptitude Tests	Oct. 14, 15		S. Peterson, 222 E. Superior St., Chicago 11
National Board of Dental Examiners	Dec. 5, 6		Grace Parkin, 222 East Superior St., Chicago 11

MEETINGS OF OTHER ORGANIZATIONS

Name	*Date*	*Place*	*Secretary or Chairman and Address*
Academy of General Dentistry	Oct. 17-20	Los Angeles	A. L. Knab, 8500 Stony Island Ave., Chicago
American Academy of Dental Medicine	Dec. 4	New York	G. F. Clarke, 554 Franklin St., Melrose, Mass.
American Academy of Gold Foil Operators	Oct. 14, 15	Los Angeles	C. C. Latham, P.O. Box 266, Coronado, Calif.
American Academy of the History of Dentistry	Oct. 14	Los Angeles	M. B. Asbell, 25 Haddon Ave., Camden 3, N.J.
American Academy of Implant Dentures	Oct. 14-16	Los Angeles	A. N. Cranin, 2120 Ocean Ave., Brooklyn 29
American Academy of Maxillofacial Prosthetics	Oct. 20-22	Los Angeles	M. C. Cleaver, 2330 Linwood Ave., Coytesville, N.J.
American Academy of Oral Roentgenology	Oct. 14, 15	Los Angeles	T. S. Grant, University of California Medical Center, San Francisco 22
American Academy of Periodontology	Oct. 13-15	Santa Monica, Calif.	H. A. Hartman, 4187 Pearl Rd., Cleveland 9
American Academy of Restorative Dentistry	Feb. 4, 5	Chicago	M. H. Mortonson, Jr., 735 N. Water St., Milwaukee 2
American Association of Dental Editors	Oct. 15	Los Angeles	S. Epstein, 260 Santa Clara Ave., San Francisco
American Association of Dental Examiners	Oct. 14, 15	Los Angeles	C. J. Schweikhardt, 20 Durand Rd., Maplewood, N.J.
American Association of Dental Schools	Mar. 26-29	Boston	R. Sullens, 840 N. Lake Shore Dr., Chicago 11
American College of Dentists	Oct. 16	Los Angeles	O. W. Brandhorst, 4236 Lindell Blvd., St. Louis 8
American Dental Assistants Association	Oct. 17-20	Los Angeles	Mrs. E. Troutman, First National Bank Bldg., La Porte, Ind.
American Dental Assistants Certification Board	Oct. 12-16		D. Thacker, 1419 "S" St., S.E., Washington 20, D.C.
American Dental Society of Anesthesiology	Oct. 15, 16	Los Angeles	H. A. Sultz, 1275 Delaware Ave., Buffalo 9
American Denture Society	Oct. 14, 15	Los Angeles	V. L. Steffel, College of Dentistry, Ohio State University, Columbus
American Equilibration Society	Feb. 2	Chicago	R. C. Van Dam, 11431 S. Halsted St., Chicago 28

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Name	*Date*	*Place*	*Secretary or Chairman and Address*
American Institute of Oral Biology	Oct. 8-12	Palm Springs, Calif.	M. Lewis, 2240 Channing Way, Berkeley 4, Calif.
American Public Health Association, Dental Health Section	Oct. 31-Nov. 4	San Francisco	D. F. Striffler, P.O. Box 711, Santa Fe, N. Mex.
American Society for the Advancement of General Anesthesia in Dentistry	Oct. 24	New York	M. H. Feldman, 730 Fifth Ave., New York 19
American Society of Dentistry for Children	Oct. 14-16	Los Angeles	W. O. Young, 120 N. Capitol Blvd., Boise, Idaho
American Society of Oral Surgeons (Forty-second)	Oct. 12-15	Phoenix, Ariz.	D. C. Trexler, 840 N. Lake Shore Dr., Chicago 11
A.R.P.A. Internationale (International Society for Periodontal Research) 16th Congress	Sept. 15-20	Vienna, Austria	S. Loos, Kolingasse 4, Vienna 9, Austria
Association of American Women Dentists	Oct. 17	Los Angeles	G. Cramer, 95 W. Broadway, Salem, N.J.
Canadian Dental Association	Sept. 25-28	Ottawa, Canada	D. W. Gullett, 234 St. George St., Toronto 5
Central Dental Association	Feb. 19-22	Aspen, Colo.	D. I. Muirhead, Hastings, Minn.
Chicago Dental Society	Feb. 5-8	Chicago	K. S. Richardson, 30 N. Michigan Ave., Chicago
Cuban Dental Congress (Fifth National and First International)	Oct. 24-27	Havana	R. Madan, Calle L, 353, Vedado, Havana, Cuba
Denver Dental Association	Jan. 8-11	Denver	G. L. Ogle, Republic Bldg., Denver 2
Great Lakes Society of Orthodontists	Nov. 27-30	Cincinnati	E. A. Cheney, 635 Applegate Lane, East Lansing, Mich.
Greater New York Dental Meeting (Thirty-sixth)	Dec. 5-9	New York	M. Purdy, 106-A Hotel Statler Hilton, New York
International College of Dentists, U.S.A. Section	Oct. 15, 16	Los Angeles	H. O. Westerdahl, 4829 Minnetonka Blvd., Minneapolis 16
International Dental Meeting of Paris (Thirty-fourth)	Nov. 21-27	Paris	M. J. Boursier, 17, rue du Colisée, Paris 8e, France
Mid-Continent Dental Congress	Nov. 27-30	St. Louis	J. E. Brophy, 8013 Maryland Ave., St. Louis 5
Mid-West Society of Periodontology	Feb. 4	Chicago	L. Howlett, Jr., Medical Arts Bldg., Springfield, Mo.
New England Dental Society	Oct. 5, 6	Medford, Mass.	W. F. O'Meara, 904 Main St., Hartford 3, Conn.
New Orleans Dental Conference (Thirteenth)	Nov. 13-16	New Orleans	M. R. Matta, Maison Blanche Bldg., or J. O. Kuebel, Jr., 1636 Louisiana Ave., New Orleans
Northeastern Society of Orthodontists	Nov. 14, 15	Boston	D. Mossberg, 36 Central Park S., New York 19
Northeastern Society of Periodontists	Nov. 4	New York	I. W. Scopp, V.A. Hospital, First Ave. at E. 24 St., New York 10
Odontological Society of Western Pennsylvania	Oct. 25-27	Pittsburgh	H. D. Butts, Jr., Jenkins Bldg., Pittsburgh 22
Pan Pacific Dental Conference	Oct. 23-27	Honolulu, Hawaii	F. A. Sandberg, 280 Lewers Rd., Honolulu 15, Hawaii
Paraguay National Dental Meeting (Third)	Oct. 26-29	Asuncion	H. Oxilia, Casilla de Correo 565, Asuncion
Polish Stomatological Congress	Sept. 23-25	Warsaw, Poland	General Secretariat, III Polish Stomatological Congress, 18 rue Miodowa, Warsaw 40, Poland
Western District Dental Group (International)	Nov.	Buenos Aires, Argentina	M. Wlkin, Tucuman 1694, Buenos Aires, Argentina

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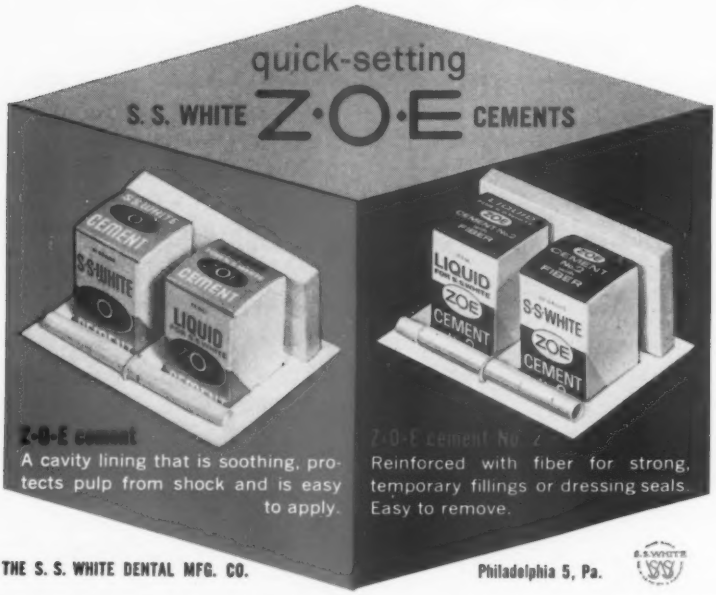

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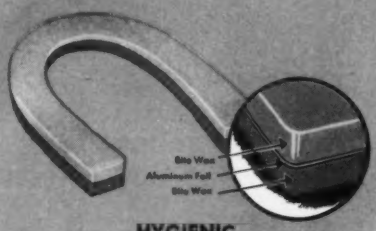

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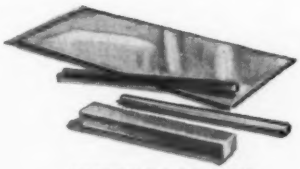

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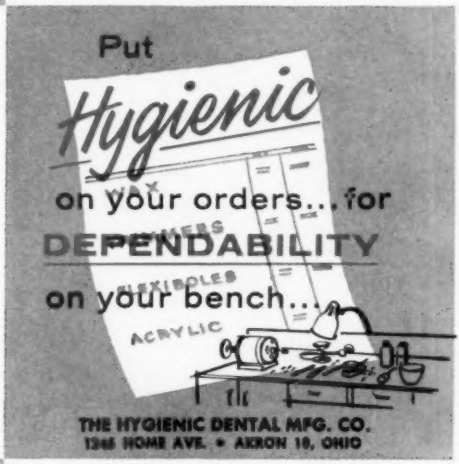

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What a mess! But not for long when it's a Hygienic Flexibole! Just flex and wipe clean with a damp cloth—plaster, stone, investments and alginates will not stick to its surface. No tedious scraping is necessary. This is inherent in the material itself, not just a surface glaze, so that the self-cleaning property is retained even after prolonged abrasive action. Available in 5 sizes up to a Jumbo 6" bowl.

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the temporary crowns you'd pick for your own mouth!

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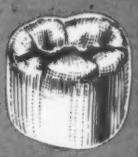

so easy to fit — and they last!

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36 Crown Assortment—ONLY $14.40

in plastic jewel case with free crown gauge

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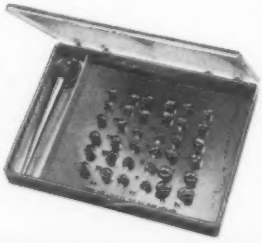

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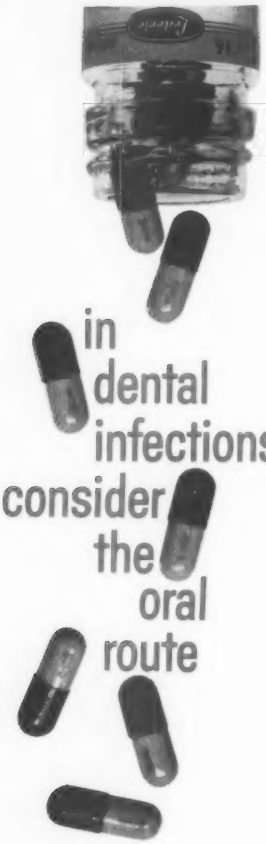

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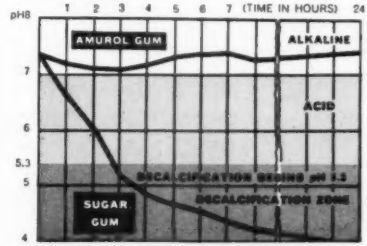
Comparative in vitro Effects of Sugar Gum and Amurol Gum added to Saliva



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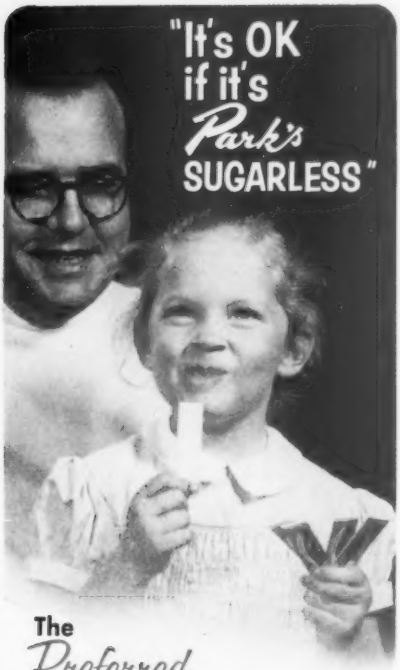

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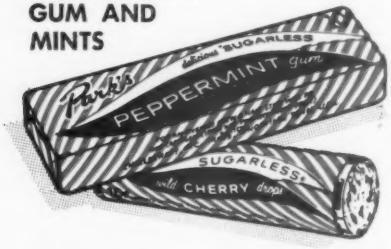

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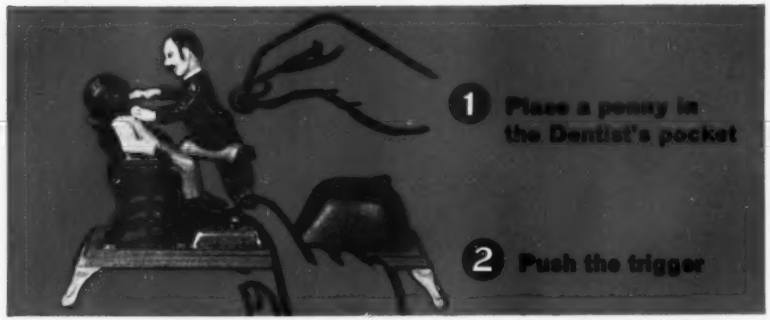

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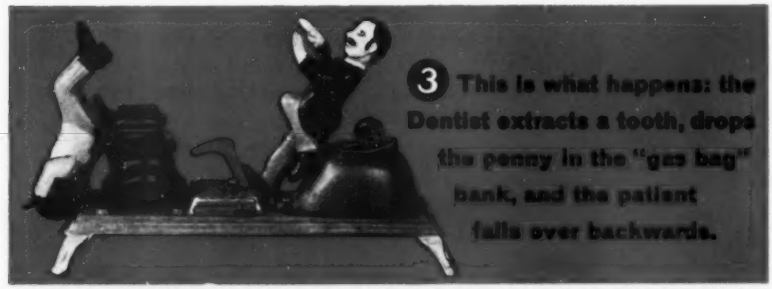
3 This is what happens: the Dentist extracts a tooth, drops the penny in the "gas bag" bank, and the patient falls over backwards.

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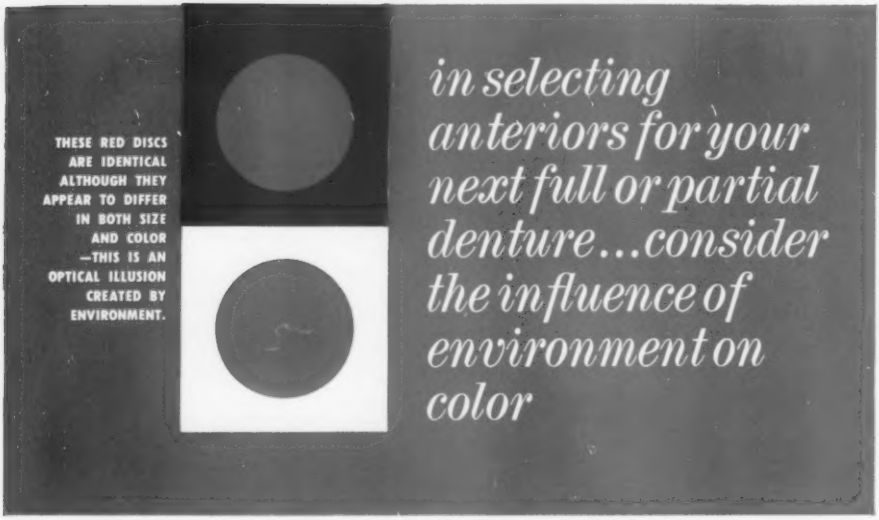
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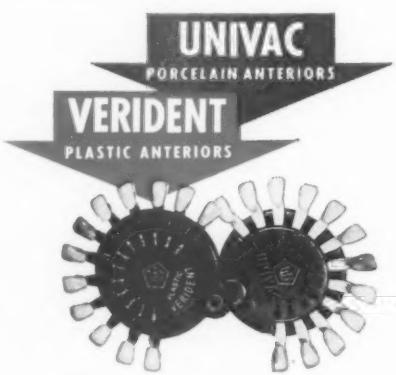

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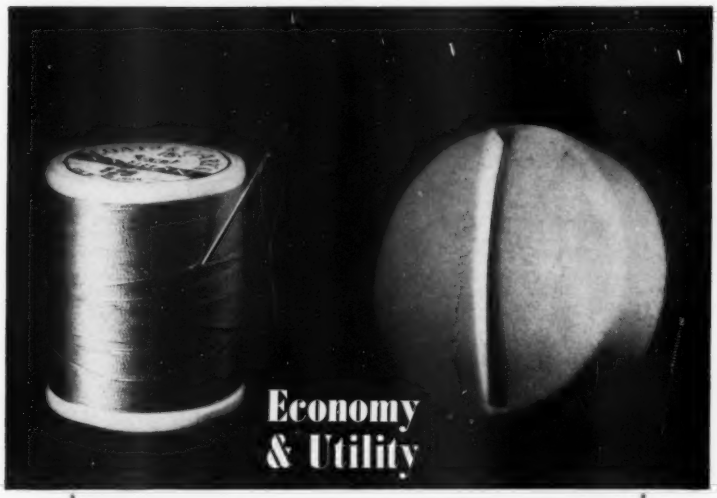

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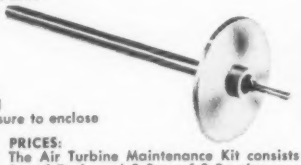

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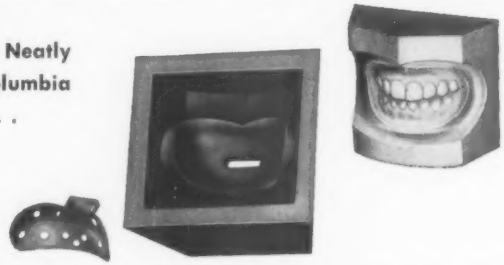

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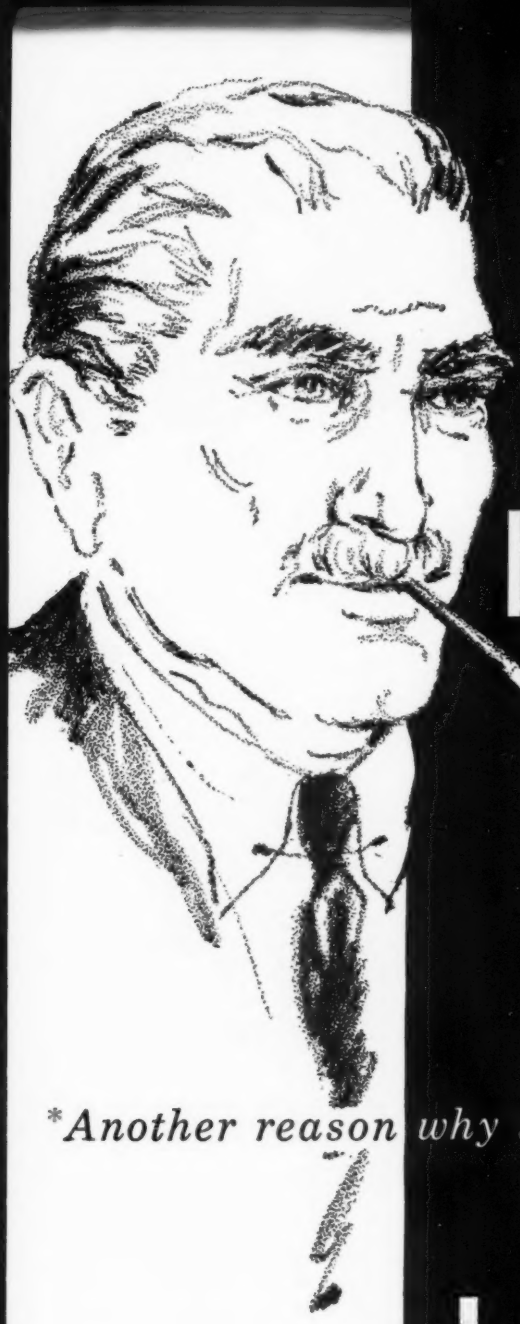

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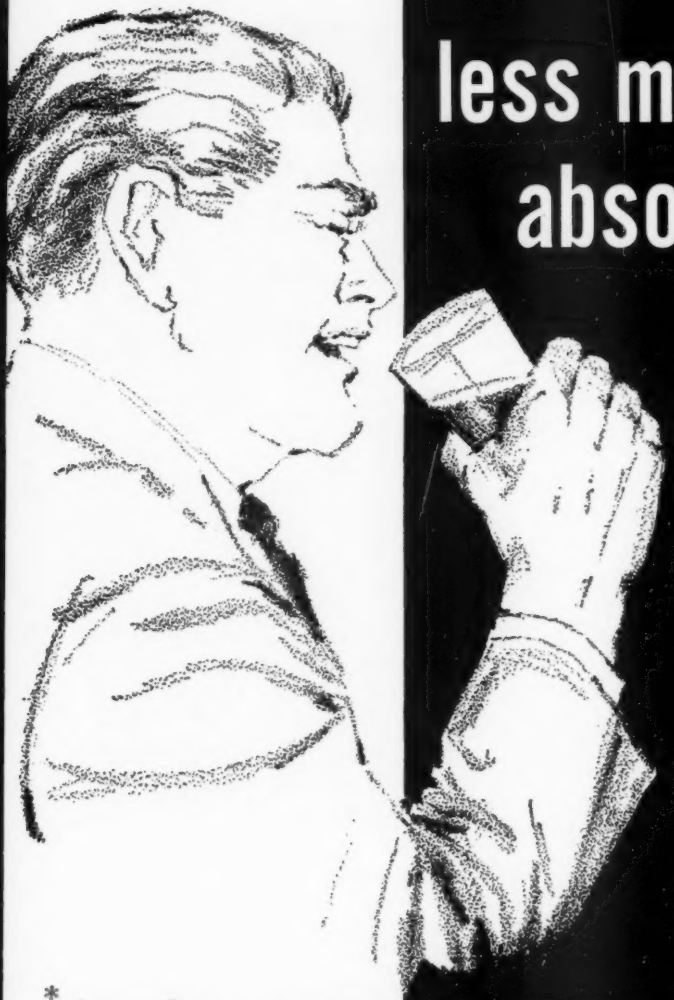

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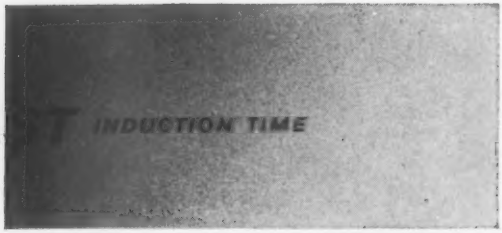

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Fig. A: Contact too broad occluso-gingivally.

In Fig. A of the mesio-distal section, for example, the contact is too broad in the occluso-gingival dimension, and stringy foods are apt to be caught and held.

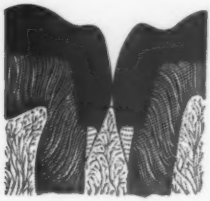

Fig. B: Contact too far to gingival.

In Fig. B the contact is too far to the gingival. This creates a wedge-shaped occlusal embrasure, into which food is packed. The force created destroys the alignment of the teeth damaging the gingival tissues.

Fig. C: Contact too close to occlusal.

Fig. C shows a contact too close to the occlusal. Such a contact does not provide the sluice-way effect so necessary for tissue stimulation and for self-cleansing action.

Fig. D: Contact normal.

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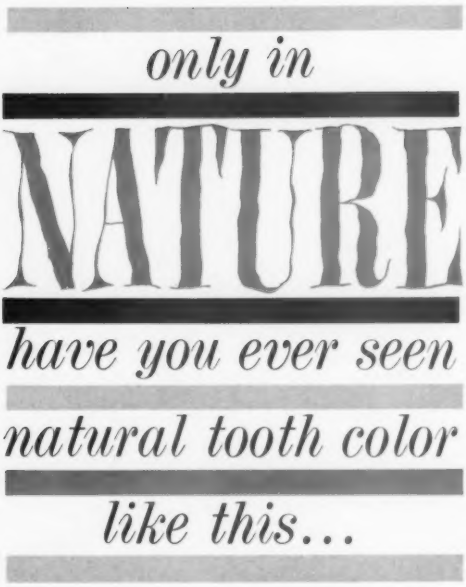
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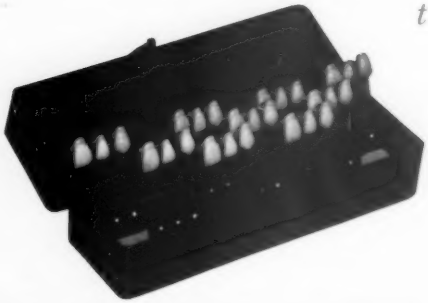

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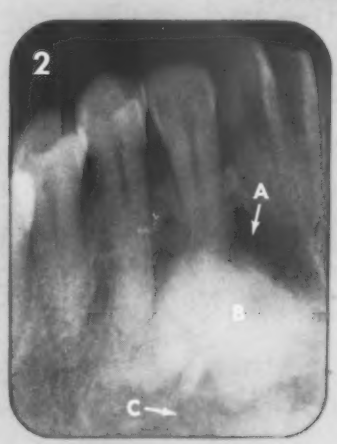
Since lesions of *fibrous dysplasia* vary as to degrees of calcification, their radiographic appearances also will vary greatly. Some may simulate the osteoma (Figures 1, 2, 3); Paget's disease of bone (Figures 4, 5); multilocular cyst or adamantinoma (Figure 6).



Figures 1, 2, 3: Three periapical radiographs of a single *fibrous dysplasia* of the mandible in the incisor-cuspid-bicuspid region. Note that the intraosseous tumor is composed of structures with varying degrees of density: (A) Distinctively radiolucent portion; (B) Dense radiopacity; (C) An intermediate density. Note similarity to an osteoma.

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Note: Further examples of *fibrous dysplasia* and its variable radiographic features will be presented in a subsequent issue of this publication. Reprints available upon request.

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Figures 4 & 5: Periapical and occlusal radiographs of a *fibrous dysplasia* showing obvious deformity of the anterior mandible. Here is seen a widespread radiolucency with indistinct peripheral borders, interspersed with evidences of minute and diffuse calcification; the latter, giving the appearance of "ground glass," simulates the radiographic findings in Paget's disease of bone.

Figure 6: An extraoral radiograph of a mandibular *fibrous dysplasia* which simulates a multilocular cyst at "A" and an adamantinoma at "B". This form of *fibrous dysplasia* is composed of connective tissue with minimal or moderate calcification. Note the fairly *homogenous* radiolucencies of variable size and shape—most of which are surrounded by hyperostotic borders.

**Radiographs and caption material from the Division of Stomatology, School of Dental and Oral Surgery, Columbia University, New York City.*

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Omaha 2, Nebraska

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University of Nebraska
Lincoln 8, Nebraska

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Fairleigh Dickinson University
Teaneck, New Jersey

College of Dentistry
Seton Hall University
Jersey City, New Jersey

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New York 32, New York

College of Dentistry
New York University
New York 10, New York

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University of Buffalo
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Philadelphia 40, Pennsylvania

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University of Pennsylvania
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University of Pittsburgh
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Nashville 8, Tennessee

College of Dentistry
University of Tennessee
Memphis 3, Tennessee

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Baylor University
Dallas 10, Texas

University of Texas Dental Branch
Houston 25, Texas

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Medical College of Virginia
Richmond 19, Virginia

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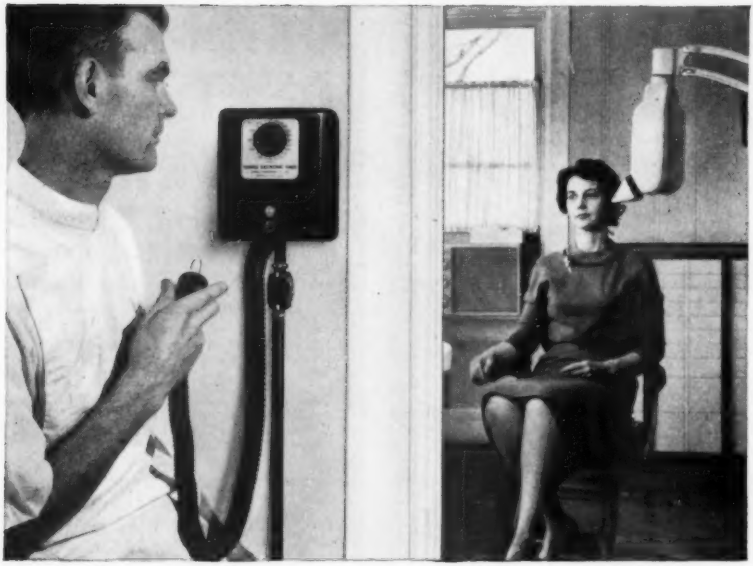

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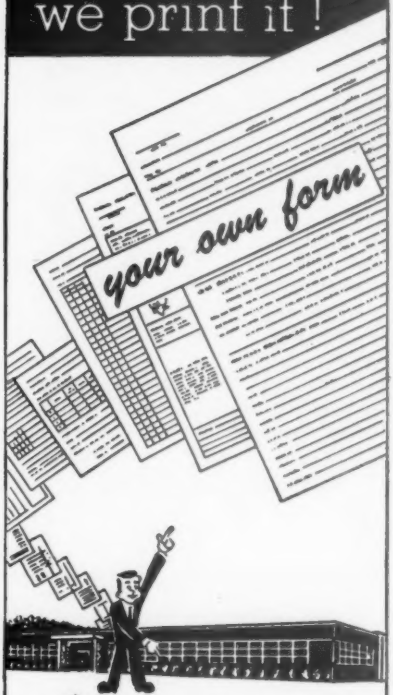

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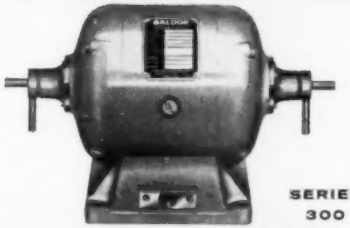

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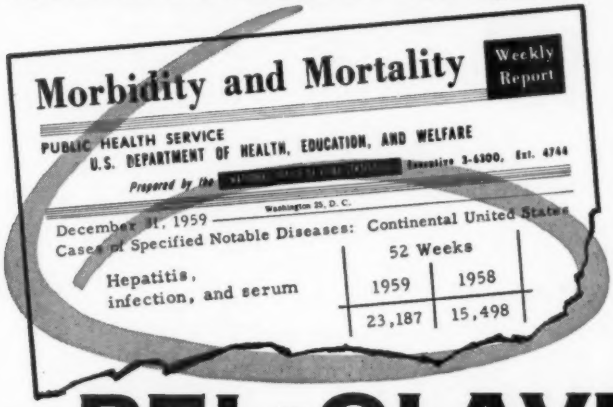

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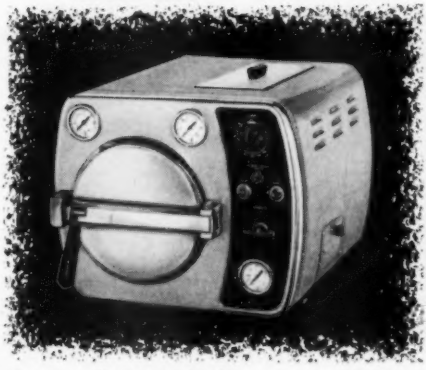

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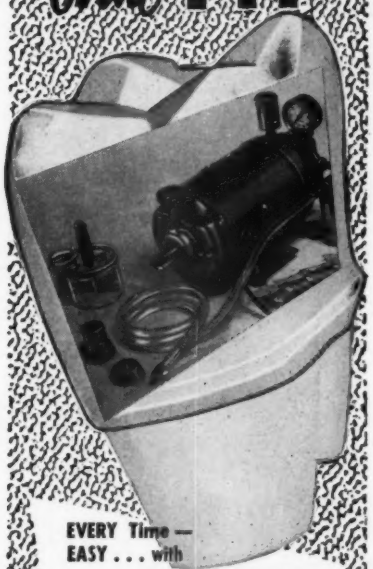

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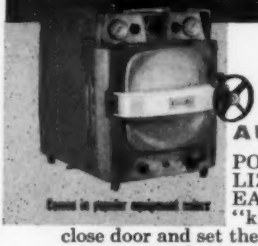

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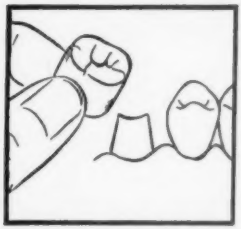
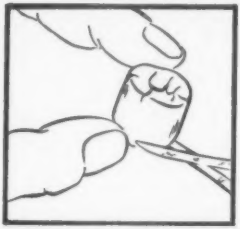
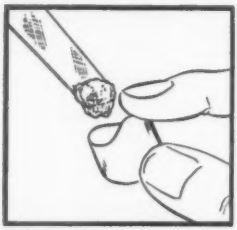
Using Precarved Aluminum Crowns



1 Select crown to fit snugly over prepared tooth



2 Cut crown gingivally to tooth height



3 Fill with temporary cement

4 . . . and seat on tooth

- No contouring required . . . saves chair time.
- Precarved crown adapts to tooth as it is seated—occlusal adapts immediately to opposing tooth.
- Fits like a casting—work hardens during use—can be worn for extended periods.

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Box number must appear on the envelope.

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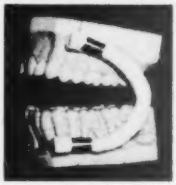

Fig. 1—Illustrates cotton roll holder when placed on the buccal surfaces of the teeth.

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Fig. 2—Illustrates cotton roll holder placed in the floor of the mouth.

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NEW JERSEY—Bergen County. For sale. Busy, high caliber general practice. Modern office. Two fully equipped operating rooms. Ideal type practice. Home also available. Address A.D.A. Box No. 950.

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NEW YORK—For rent. Suitable for dentist, former physician's office. Three rooms, lavatory, darkroom, private entrance, centrally located. Mid-Hudson village, growing college town, excellent schools, 75 miles from New York City. Address A.D.A. Box No. 951.

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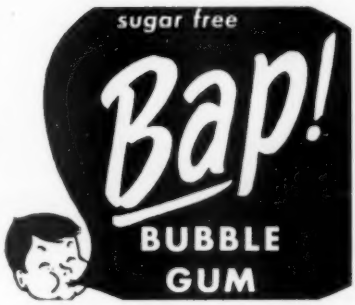

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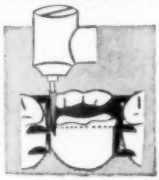

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1961

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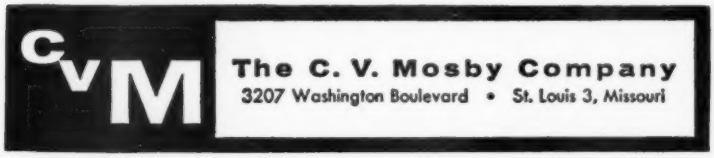

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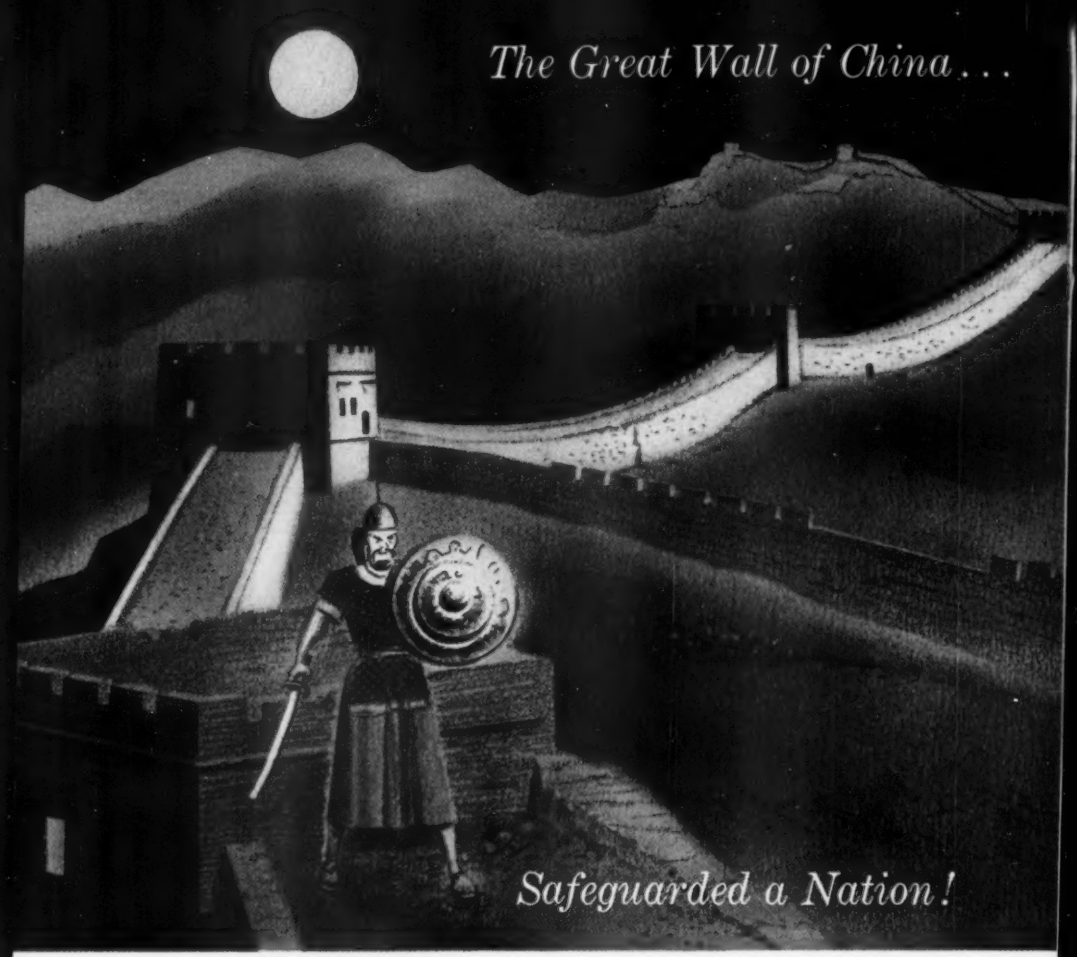

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obsolete x-ray equipment

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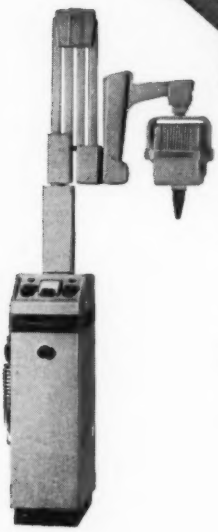

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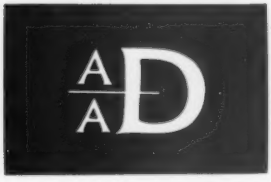

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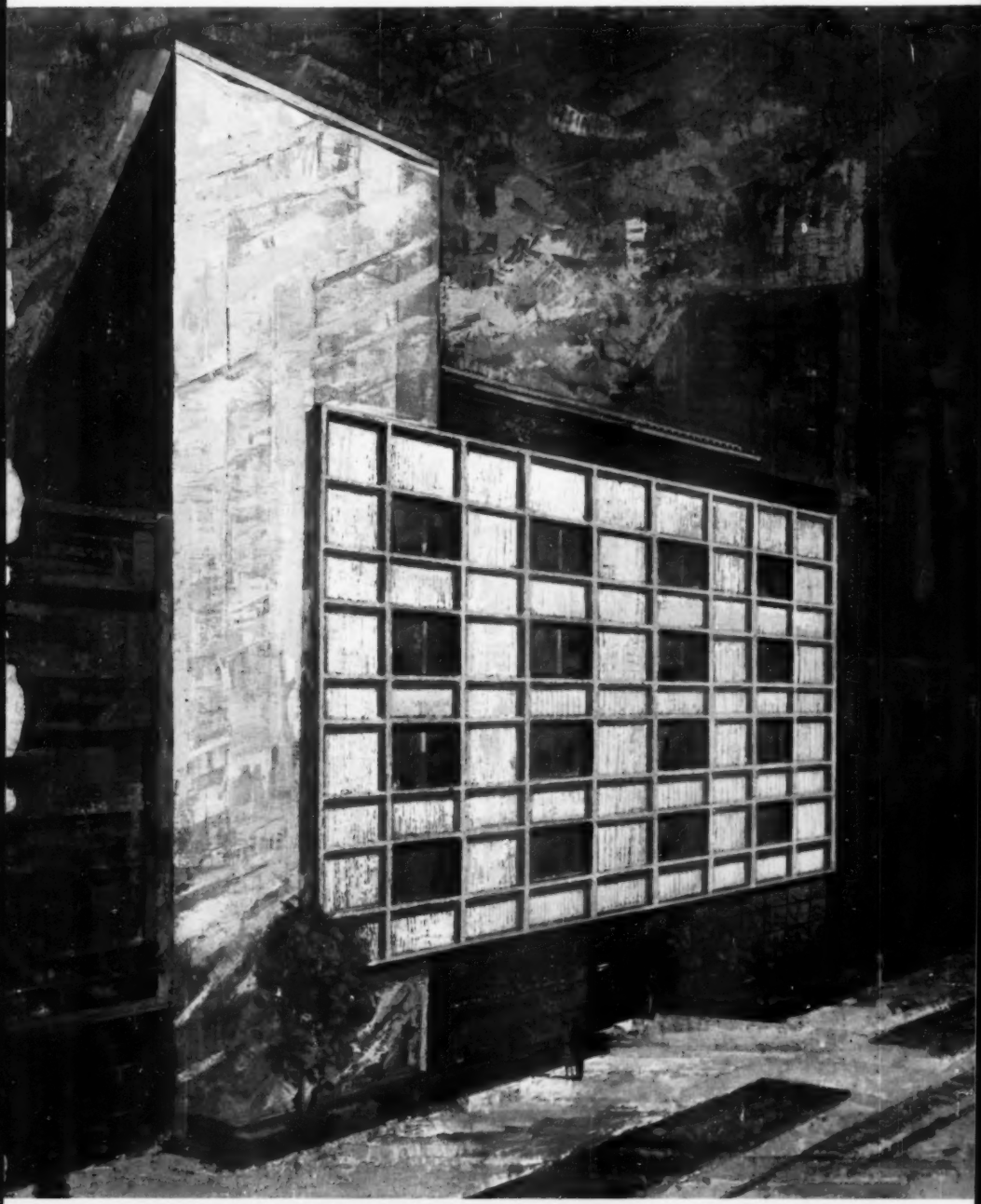
A report of major significance from Procter & Gamble



AMERICAN DENTAL ASSOCIATION HEADQUARTERS

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DENTISTRY: CONSTANT PROGRESS THROUGH CONSTANT STUDY

THE COUNCIL ON DENTAL THERAPEUTICS

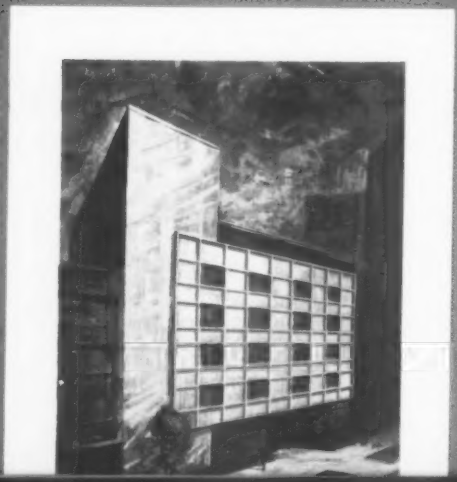
of the

AMERICAN DENTAL ASSOCIATION

has announced its conclusion that

CREST TOOTHPASTE

is an effective anticaries dentifrice



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2.
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3.
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4.
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each brushing cannot be emphasized too strongly. CREST gives the dentist a home care method that provides added effectiveness within the usual routine of the patient. CREST is effective for both children and adults. There are many indications for recommending its use to supplement other dental health procedures and your own professional care.

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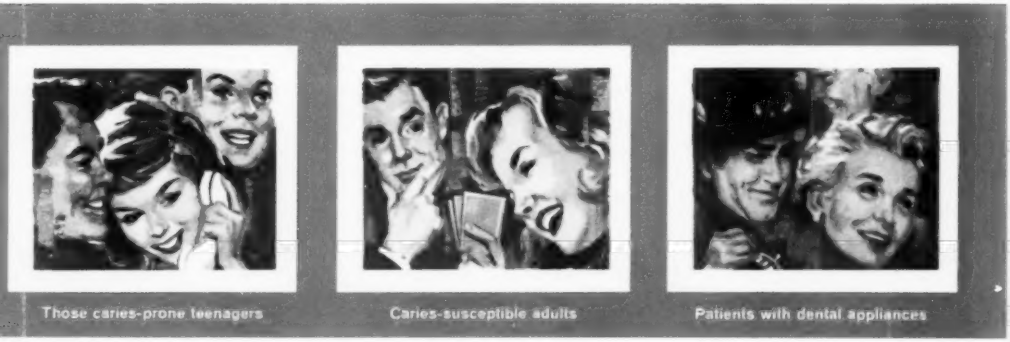

Those caries-prone teenagers

Caries-susceptible adults

Patients with dental appliances

CREST Toothpaste is pleased to announce a continuing series of

Aids to the practice of preventive dentistry

The huge backlog of dental disease, plus an exploding population that is exceeding the growth of the profession itself, together point to the critical need for greater emphasis on preventive dental care if we are to avoid a major dental health crisis in this country. Basically, constant progress is needed in these two areas:

1. Steady improvement in the techniques of prevention.

2. Ever-increasing awareness by the public of the importance of good dental health, and the methods of maintaining it through professional care, individual oral hygiene and public health procedures.

Procter & Gamble's Division of Dental Research is vitally interested in the subject of preventive dentistry, and we plan to cooperate with the profession in every way we can, by providing aids to the practice of preventive dentistry. Our plans include the following:

1. To strive constantly to develop new and better products and techniques for preventive dental care.

2. To help to disseminate the latest information dealing with the practice of preventive dentistry.

3. To continue to help arouse the public to the need for complete, preventive care by means of EPIC Program patient education materials, and through lay media.

In the months to come we will be pleased to send you a series of bulletins, each of which will contain information about aids to the practice of preventive dentistry. Please watch for them.

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DENTISTRY: CONSTANT PROGRESS THROUGH CONSTANT STUDY

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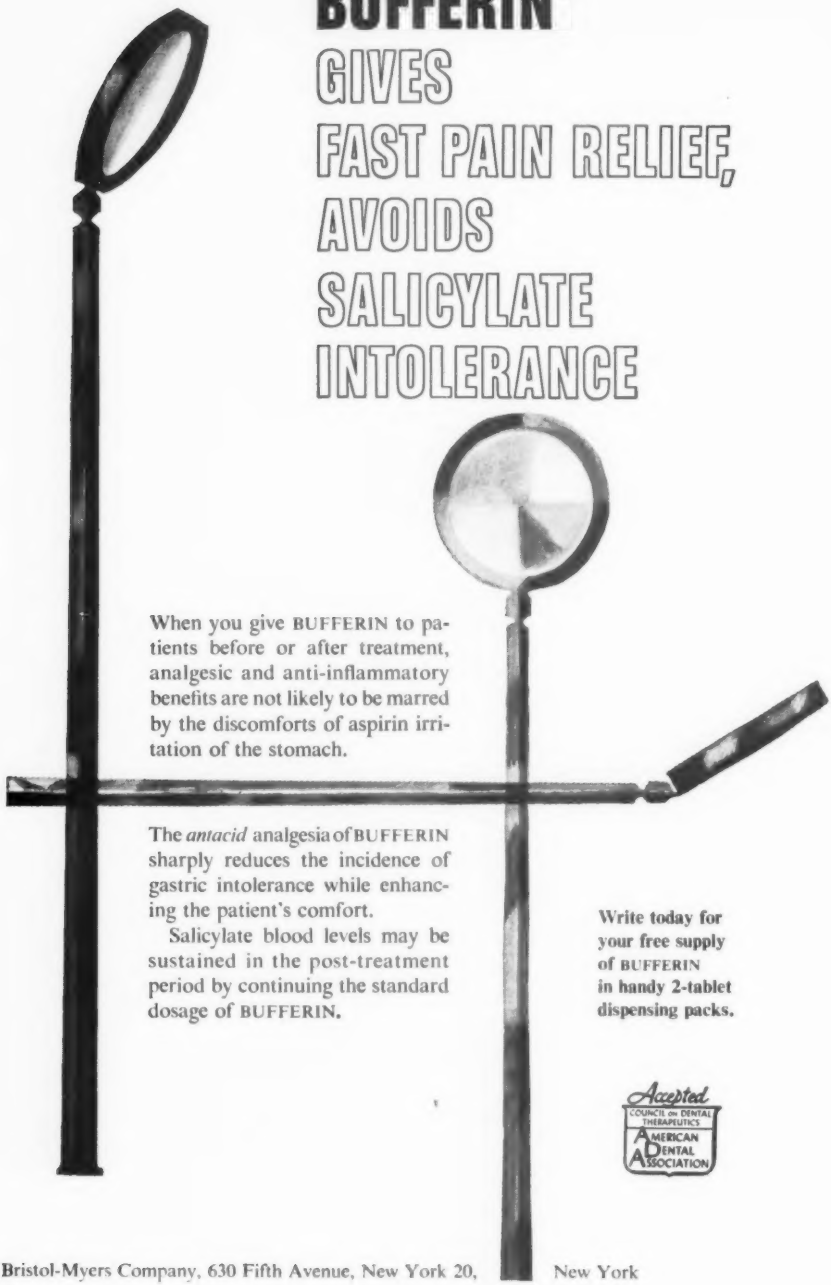

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